

TECHNOLOGY DEPT.

Flow

MATERIALS HANDLING AND PACKAGING METHODS

NOVEMBER, 1950

PUBLIC LIBRARY

NOV 3 / 1950



CIRCULATION THIS ISSUE - 30,228



**SEND FOR
YOUR FREE COPY OF**

UNION METAL CATALOG 77

**... it describes the latest in
cost-cutting materials handling equipment**

● During recent years there have been many important advancements in the design and construction of materials handling boxes, skids and pallets... developments that save real money in the handling, flow and storage of all kinds of material. You'll find this particularly true in the Union Metal line—believed to be the most exten-

sive, most complete on the market today.

The new 24-page catalog, No. 77, tells all about the latest Union Metal features and developments. It also shows and clearly describes the wide variety of standard skid-box-pallet combinations possible for the simplest solution to prac-

tically any materials handling problem.

Send for your copy. Look it over. Unless we miss our guess it will give you some ideas that will pay off! Just use the handy coupon or write to The Union Metal Manufacturing Company, Canton 5, Ohio.

UNION METAL
Materials Handling Equipment

The Union Metal Manufacturing Company
Canton 5, Ohio
Please send me a free copy of Catalog No. 77.

Name _____
Company _____
Address _____
City _____ State _____

Circle No. 1 on Reader Service Card for more information

quest
by th
than
band
Bu
quest
tric T
To
meet



FLOW

Your Cost-Cutting Way to **SPEED PRODUCTION** **SHIP MORE GOODS FASTER** Is In This 8-Question Check Chart

ANSWERING "YES" TO THESE
QUESTIONS HAS SAVED
INDUSTRY MILLIONS THE
AUTOMATIC ELECTRIC
TRUCK WAY!



1. Do you know how many of your workers are engaged in *manual* lifting, moving and stacking of materials?
2. Have you eliminated skilled workers from wasting time hand-moving materials in production?
3. Do you know *exactly*, or *even approximately*, what percentage of your product cost represents material handling cost?
4. Can just *one* man lift and move tons and tons of material with *easy, finger-tip-control* of electric push button, as is the case with Automatic Electric Transporters?
5. In storage areas, are you using empty but usable space overhead, stacking your products *ceiling high*, as can be done by *one* man operating a Transtacker or Automatic Skylift Electric Truck?
6. Do you know how many tons of material you move *into, through and out of* your plant daily?
7. Have you done anything to relieve labor and skilled workers' fatigue and loss of time, caused by back-breaking *hand-lifting*, bending and *hand-truck-moving* of material through your plant?
8. Do you know how much *hand-handling* of materials is costing you in (1) material and product *damage*, (2) needless *accidents*, (3) tired, *low morale* workers, and (4) production inefficiency?

CHECK
YES NO

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

THE SCORE TELLS IF YOUR PRODUCTION IS TOO
SLOW, DELIVERIES BEHIND, COSTS TOO HIGH!—

<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------

This check chart of 8 important material handling questions has become famous in industry. Business men, by the thousands, found that "NO" answers to more than 4 of these questions meant there were "hidden handling costs" eating into their profits.

But when they could answer "YES" to the above questions, by applying the remedy of Automatic Electric Trucks, costs were cut 50% to 75%.

Today these trucks are paying an extra bonus in meeting today's stepped-up demand! They speed produc-

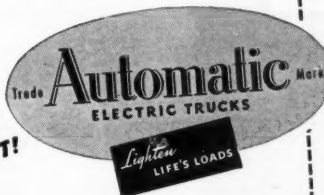
tion, get rid of costly bottlenecks, delayed deliveries... help you to ship more goods faster!

They move tons and tons of your product with easy finger-tip control. They *stack* as well as lift and move your material... save you costly man-hours, *pay for themselves in as little as months*. Let us show you the cost-cutting way they can speed up the flow of goods in your plant, to meet today's accelerated demand! Mail coupon.



Send now for this free booklet: "How to Make Your Material Handling Pay Dividends."

SEND
COUPON FOR
FREE BOOKLET!



Trade **Automatic** Mark

141 West 87th Street
Dept. W-5, Chicago 20, Ill.

Please send me facts on how to SPEED PRODUCTION and SHIP MORE GOODS FASTER with Automatic Electric Trucks... also free booklet: "How to Make Your Material Handling Pay Dividends."

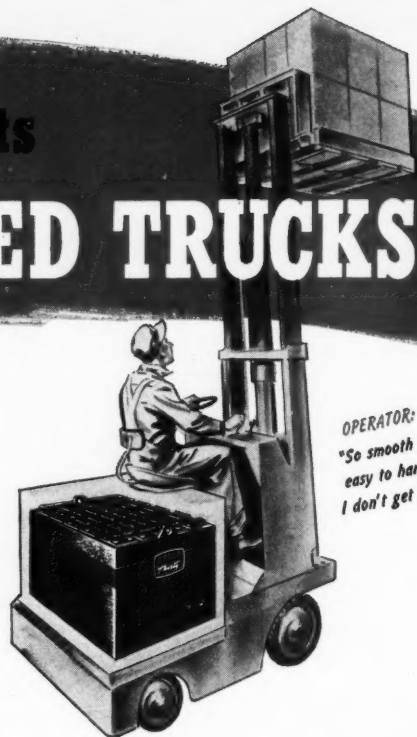
Company Name.....
By.....
Street Address.....
City.....Zone.....State.....

Circle No. 2 on Reader Service Card for more information

Everybody Wants GOULD-POWERED TRUCKS!

Gould "Thirty" Batteries deliver full power months after ordinary batteries have begun to slow down. That's because only Gould has the revolutionary new "Z" Plates with regenerative power-producing material that keeps renewing itself every day the truck is in use! The grid itself is 66% more resistant. Grid porosity is reduced 85%.

**GOULD "THIRTY" BATTERIES
with NEW "Z" PLATES**
are America's Finest Industrial Truck Batteries!



OPERATOR:
"So smooth and
easy to handle,
I don't get tired."



PRODUCTION:
"Battery trucks do more work.
Always ready, they position loads
faster, lift and go at the same time."



PERSONNEL:
"Employees like
the quiet, odorless
battery trucks."



ACCOUNTING:
"Battery truck cost distribution
is predictable; insurance is lower too."

GOULD

STORAGE BATTERIES

GOULD-NATIONAL BATTERIES, INC.

TRENTON 7, NEW JERSEY

Always Use Gould-National Automobile and Truck Batteries
**Formerly Gould Storage Battery Corporation*



SAFETY:
"Battery trucks' floor-hugging stability
and foolproof speed controls
cut accidents."

Circle No. 3 on Reader Service Card for more information



COVER PHOTO shows a fork truck with finger attachment moving linoleum rolls in the Chicago warehouse of Carson, Pirie, Scott & Company. Story on Page 40.

VOL. 6, NO. 2

NOVEMBER, 1950

FLOW is not the official publication of any group, society or other special interest: its editorial pages are unbiased and undominated.

CONTENTS

FEATURES

INTRODUCING: Handling Idea of the Month.....	29
Scoop Trucks and Trailer System Ups Production Efficiency 25%	31
INTRODUCING: Don't Do This.....	33
Mobile Yard Cranes Double Work Volume.....	34
Two-Way Radio Triples Truck Load Hours.....	36
INTRODUCING: Cost Cutting Briefs.....	38
Storage Bins Make Good Handling Unit.....	47
Handling and Storing Bulky Items.....	40
Economic Handling of Drums—Planned in Advance.....	44
INTRODUCING: Handling and Packaging Data Sheet.....	48
Engineering Data Page—Crane Wheel Loads.....	71

PACKAGING MECHANICS SECTION

Receive Containers in Pallet Loads and Reduce Handling Costs	66
Design Your Containers for Multiple Use.....	68

DEPARTMENTS

Letters to the Editor.....	6
Literature Featured in Ads.....	10
On the Pallet	52
Men in the News.....	53
New Products	54
Useful Literature	72
FLOW Digest	76
Opportunities	87
Index to Advertisers.....	88

FLOW is indexed regularly by Engineering Index, Inc.

SUBSCRIPTION RATES



United States and possessions—
\$3.00 per year, \$5.00 for 2 years,
\$6.50 for 3 years.

Canada—\$4.00 per year, \$6.00 for 2 years.
Foreign—\$5.00 per year.
Single copy price—30 cents.

"Acceptance under section 34.64. P. L. and R. authorized at Milwaukee, Wisconsin."

IRVING B. HEXTER
President

LESTER P. AURBACH
Vice President

Publisher and Editor
WILLIAM S. WHEELER

Managing Editor
HENRY F. EATON

Associate Editor
GORDON BOWMAN

Art Director
JOHN DIX

Roving Photographer
MICKY PALLAS

Field Correspondents
W. J. DERNBERGER
Detroit

JOHN QUINN
Kansas City

C. LEE DRYDEN
Milwaukee

MAURICE D. KILBRIDGE
Chicago

Circulation Director
EDWIN M. JOSEPH

FLOW EDITORIAL AND
BUSINESS OFFICES

CLEVELAND OFFICE
DAVID E. SAWYER
1240 Ontario Street
Cleveland 13, Ohio
Phone Superior 1-9622

NEW YORK OFFICE
ROBERT MACBETH
60 E. 42nd St.
New York 17, New York
Murray Hill 7-3420

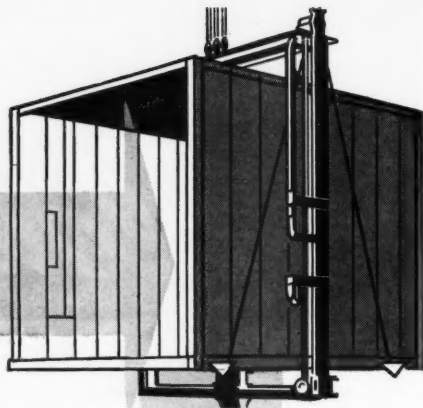
CHICAGO OFFICE
ROBERT E. MCKENNA
Room 734
520 N. Michigan Ave.
Chicago 11, Illinois
Superior 7-7823

LOS ANGELES OFFICE
FRED FRISENFELDT
Industrial Publishing Co.
Room 403
1250 Wilshire Blvd.
Los Angeles 17, Calif.
Tucker 6703

All communications should be addressed to FLOW Magazine, 1240 Ontario Street, Cleveland 13, Ohio.

FLOW Magazine is affiliated with the Industrial Publishing Company which also publishes:

DIE CASTINGS
TAXICAB INDUSTRY
APPLIED HYDRAULICS
INDUSTRY AND WELDING
OCCUPATIONAL HAZARDS
COMMERCIAL REFRIGERATION
AND AIR CONDITIONING



TURNING POINT IN EFFICIENT MATERIALS HANDLING...WHERE HORIZONTAL CHANGES TO VERTICAL

On every floor of your plant you move products on hand trucks, power trucks and conveyors. But horizontal materials handling is only one factor in your operation.

When you move your products vertically, your freight elevators have entered the picture. This is the turning point in your materials handling system.

Westinghouse can help you plan cost-cutting freight elevator installations... help you integrate the horizontal and vertical to achieve the most efficient methods in materials handling for your plant. In our book, "The Buyers' Guide for Freight Elevators" you'll find the most complete source of information available on the selection and application of freight elevators. Write on your letterhead to Elevator Division, Westinghouse Electric Corp., Dept. L, Jersey City, N. J.

WESTINGHOUSE FREIGHT ELEVATORS

YOU CAN BE SURE...
IF IT'S
Westinghouse

Circle No. 4 on Reader Service Card for more information

J-98585

NEW ELWELL-PARKER Fork Truck

**OFFERS YOU MORE
PER TRUCK DOLLAR
INVESTED!**

**Advanced Design Features
Plus Built-In Quality
Insure Top Performance**

EASY TO OPERATE—Simplified automotive-type controls. Foot accelerator pedal. Padded, form-fitting seat and back rest are adjustable. Entry or exit from either side. Maximum vision. Hydraulic brakes.

FINEST MOTOR—Elwell-Parker Class B motors have costly glass and asbestos insulation that makes them practically indestructible and fire-proof. Double sets of brushes. Bearings grease packed for over 5 years service.

"TANK-TOUGH" CONSTRUCTION—The heavy-gauge welded frames are fully reinforced. Strong Y-center sill assures permanent alignment. More alloy steel and drop forgings than in the average truck.

GREATER LIFT—Total lift is 130" with initial lift of 66".

AMPLE TILTING ANGLE—5° forward and 12° backward for greater load stability turning corners.

FASTER LIFT—25 f.p.m. with full load; 42 f.p.m. without load.

LOW HYDRAULIC PRESSURE—less than 1000 p.s.i. in cylinders reduces leakage liability.

CUSHION TIRES—give smooth riding, better traction and freedom from punctures.



MODEL F-30T
Capacity 4000 lbs.
48" Load

**YOU CAN SAVE MORE MONEY THAN
EVER BEFORE** with this Elwell-Parker! For the rise in price of improved quality E-P trucks over the years is small compared to the greatly increased cost of the labor they free for productive work. And Elwell-Parkers repay their cost over and over because they are built to give 20 years of reliable service! Not cheap in either quality or price, the new F-30T will match the finest machinery in your plant. Its simplified and refined design is the product of Elwell-Parker's greater experience and research in this field. *The F-30T is truly the truck for those who want the finest!* The Elwell-Parker Electric Company, 4239 St. Clair Avenue, Cleveland 3, Ohio.

Write for Illustrated Folder and Specifications

ELWELL-PARKER POWER INDUSTRIAL TRUCKS

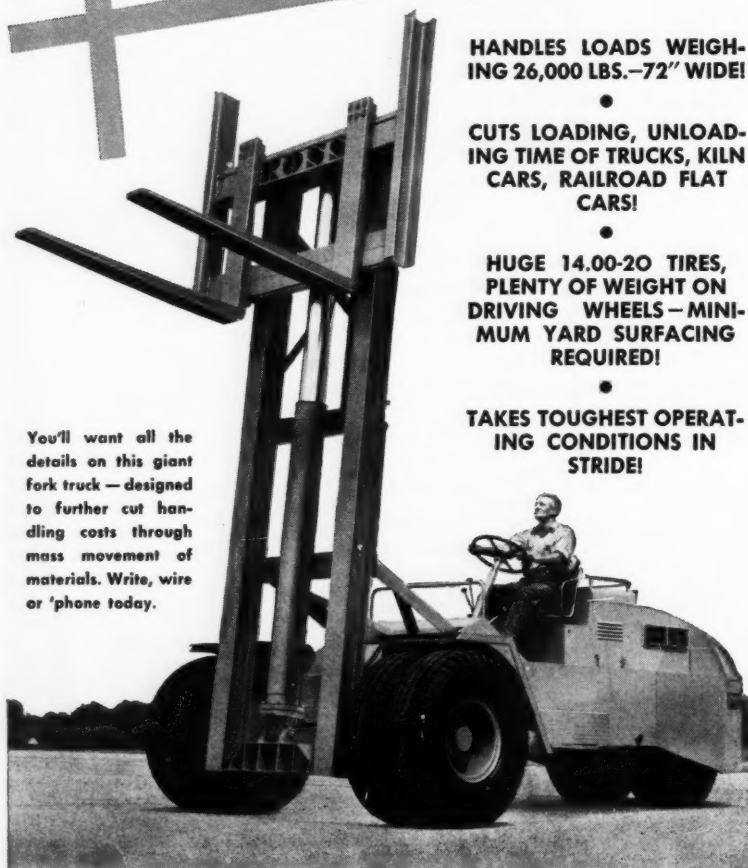
Established 1893

FLOW • NOVEMBER, 1950

Circle No. 5 on Reader Service Card for more information

New... **ROSS 24**

WORLD'S LARGEST Pneumatic-Tired FORK TRUCK



You'll want all the details on this giant fork truck — designed to further cut handling costs through mass movement of materials. Write, wire or 'phone today.

**HANDLES LOADS WEIGH-
ING 26,000 LBS.—72" WIDE!**

**CUTS LOADING, UNLOAD-
ING TIME OF TRUCKS, KILN
CARS, RAILROAD FLAT
CARS!**

**HUGE 14.00-20 TIRES,
PLENTY OF WEIGHT ON
DRIVING WHEELS—MINI-
MUM YARD SURFACING
REQUIRED!**

**TAKES TOUGHEST OPERAT-
ING CONDITIONS IN
STRIDE!**



THE ROSS CARRIER COMPANY

Direct Factory Branches and Distributors throughout the world.

280 Miller St., Benton Harbor, Michigan, USA

Circle No. 6 on Reader Service Card for more information

Letters To The Editor

To FLOW:

Possibly you can offer me some suggestions for this problem: turning 8' x 16' fibre panels in loads weighing up to $4\frac{3}{4}$ tons. At the present time we are turning each panel by hand . . . due to inspection reasons, it is not possible to run these panels upside down; we are forced to turn them after they are loaded on skids.—I. E. Holls, Cost Estimator, The Upson Co., Lockport, N. Y.

Your inquiry is being referred to the manufacturer of an inverter attachment who may be able to help you. It's hard to tell what you need without seeing the operation and the layout, but it looks like it requires the help of a handling consultant.—Ed.

To FLOW:

We have read with interest the article, "New Device for Handling Newsprint," (August, 1950, FLOW, and would like to get in touch with the manufacturer of this interesting attachment.—G. W. Vennels, Vice President and General Manager, C. M. Lovsted & Co., Ltd., Vancouver, B. C.

Mr. Tom Bartel is co-inventor of the attachment. You can get in touch with him for more details at the enclosed address.—Ed.

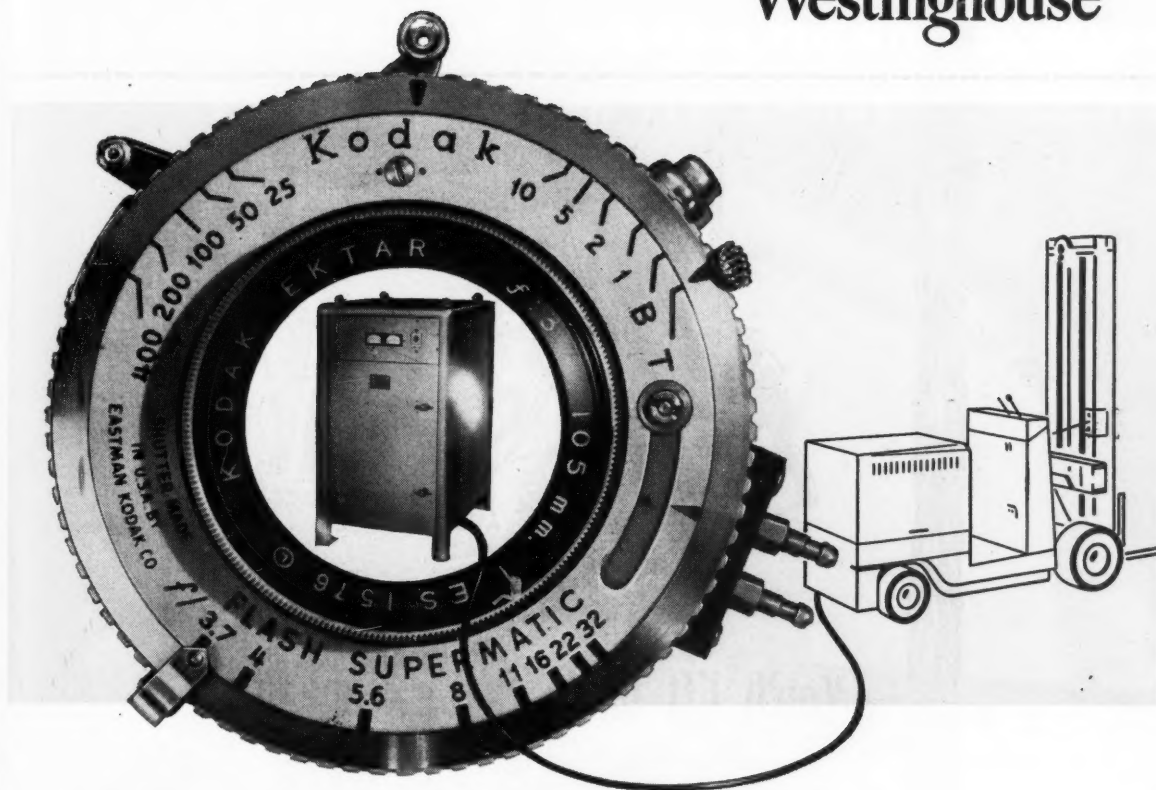
To FLOW:

I am interested in an ad I saw in a recent issue of FLOW which showed the continuous weighing of vegetables. How is this done?—John M. Downey, Methods Dept., Meredith Publishing Co., Des Moines, Iowa.

There are several ways of measuring loads as they move along a conveyor. In the case of units, the
(Turn to page 23)

NOVEMBER, 1950 • FLOW

YOU CAN BE **SURE**.. IF IT'S
Westinghouse



SIMPLE DIAL OPERATION

Clicks with **Kodak**
(TRADE-MARK)

Just plug it in, set the dials—it does the rest. Simple dials provide both high and low rate adjustment. No taps to change. Charging cycle is completely automatic.

Further, Rectox saves power. Reactors eliminate energy-wasting resistors, provide stable output over years. An exclusive manufacturing process assures uniform, constant performance

of the cells; lowest rate of forward aging.

That's why Kodak, and other large users of industrial trucks, choose Westinghouse Rectox Industrial Truck Battery Chargers.

Check your Westinghouse representative for complete details. Ask him for a copy of DB-19-040, or write Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Penna.

J-21589

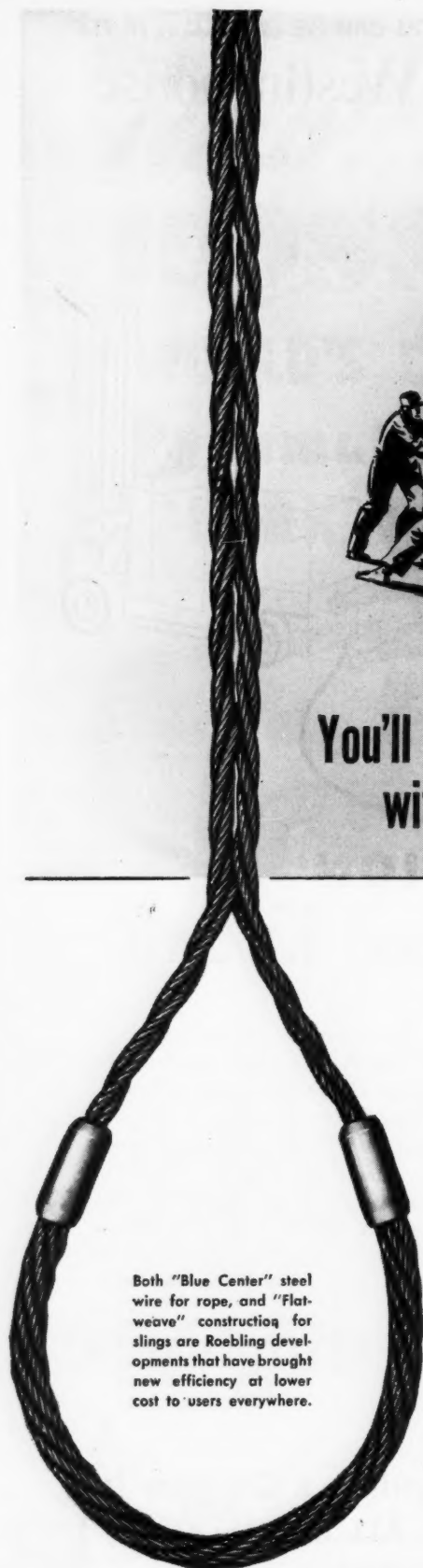


Westinghouse

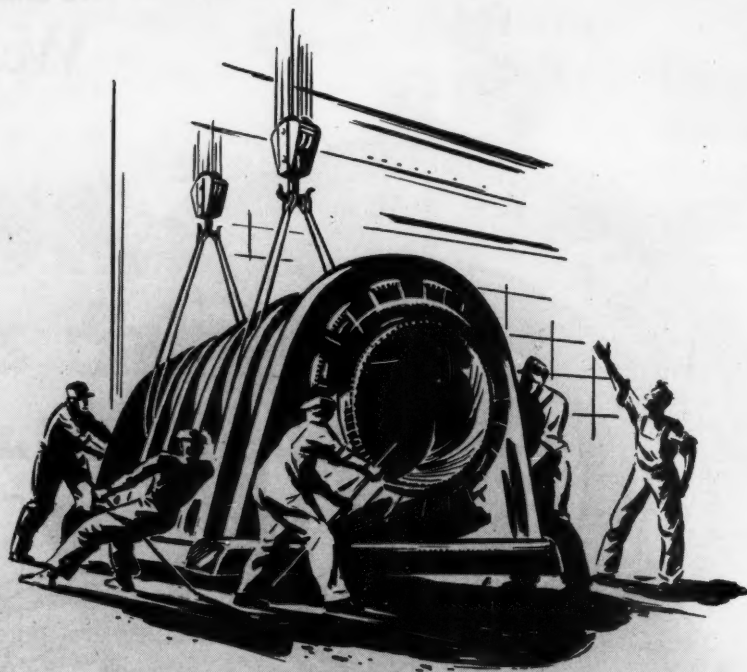
Rectox
**Rectifiers & Chargers for
ALL INDUSTRIES**

Circle No. 7 on Reader Service Card for more information

FLOW • NOVEMBER, 1950



Both "Blue Center" steel wire for rope, and "Flatweave" construction for slings are Roebling developments that have brought new efficiency at lower cost to users everywhere.



You'll lift loads faster—cheaper— with Roebling "Flatweave" Slings

YOU'LL SAVE TIME and you'll save money with Roebling "Flatweave" Slings. In the first place, they last longer. Six individual wire ropes—of Roebling's famous "Blue Center" steel wire—are woven together side by side in "Flatweave" Slings. This forms a broad, flat bearing surface which distributes the load pressure and prolongs the life of the sling.

In the next place, "Flatweave" Slings are easier and faster to handle. They are very flexible and kink resistant. You can pass them through and under loads of minimum clearance. And besides that, they are free of unnecessary fittings. Heavy thimbles and servings are not needed with the specially-reinforced loops of "Flatweave" Slings.

Write today for a copy of the "Roebling Sling Data Book". It's free . . . gives timely information about slings and sling accessories. For lifting loads with top speed, safety and economy . . .

Today it's Roebling!

JOHN A. ROEBLING'S SONS COMPANY, TRENTON 2, N. J.

ROEBLING

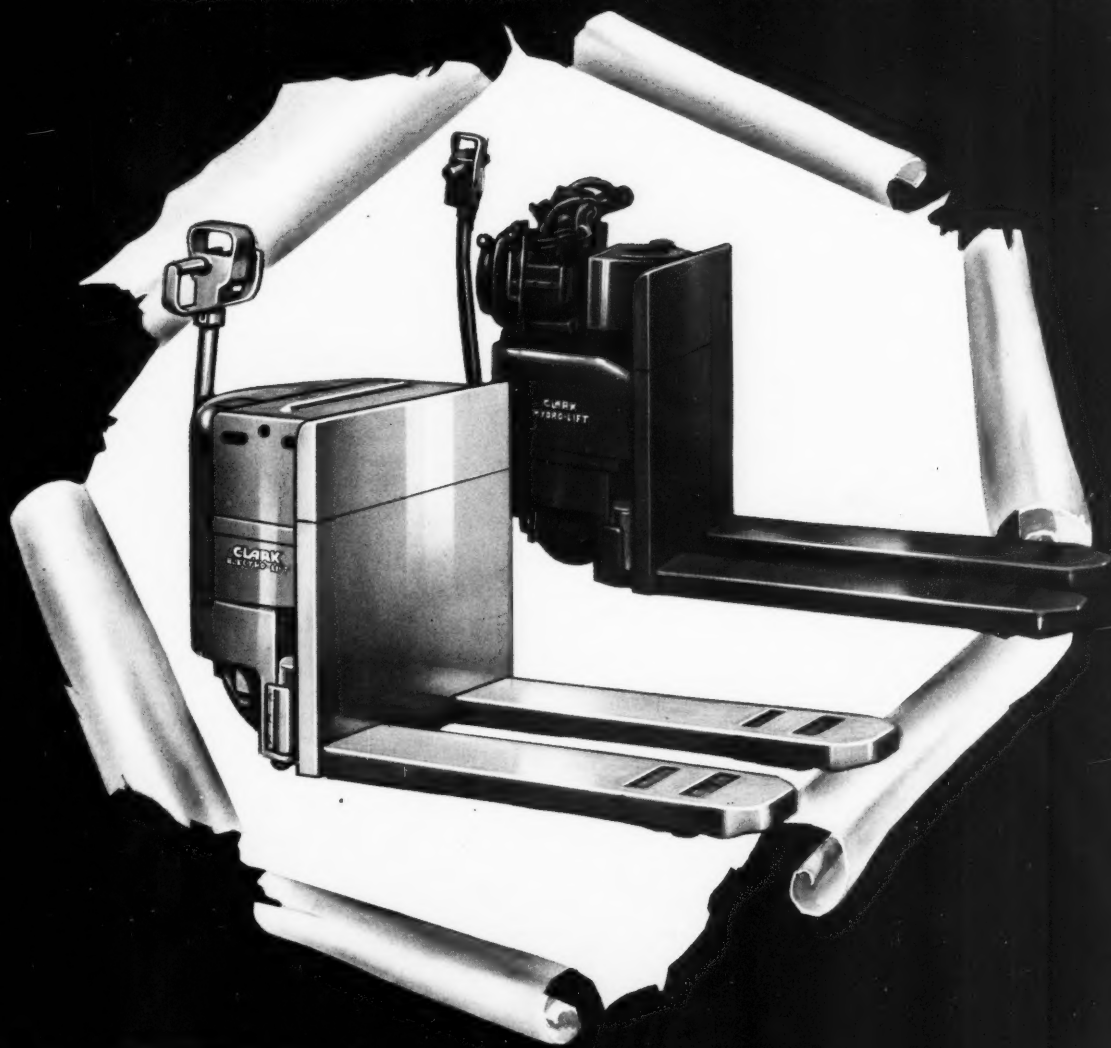
A CENTURY OF CONFIDENCE

Atlanta, 934 Avon Ave. * Boston, 51 Sleeper St. * Chicago, 5525 W. Roosevelt Road
* Cincinnati, 3253 Fredonia Ave. * Cleveland, 701 St. Clair Ave., N. E. * Denver, 4801
Jackson St. * Houston, 6216 Navigation Blvd. * Los Angeles, 216 S. Alameda St. *
New York, 19 Rector St. * Philadelphia, 12 S. Twelfth St. * Portland, 1932 N. W.
14th Ave. * San Francisco, 1740 Seventeenth St. * Seattle, 900 First Ave. S.



Circle No. 8 on Reader Service Card for more information

**NO OTHER HAND TRUCK HAS
SO MUCH POWER—SO SHORT A TURNING RADIUS!
PLUS TWO POWER TYPES—GAS OR ELECTRIC**



CLARK

POWERED HAND TRUCKS

TURN
PAGE
FOR MORE
HAND TRUCK DETAILS

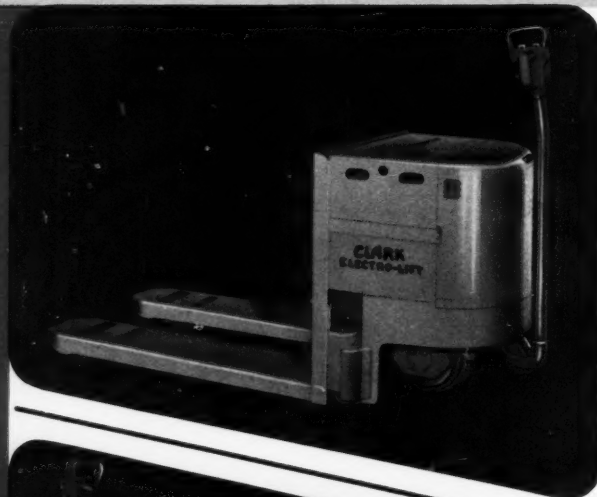
CLARK EQUIPMENT COMPANY, INDUSTRIAL TRUCK DIVISION
BATTLE CREEK, MICHIGAN

ENCE



LOW

The **NEW** CLARK POWERED HAND TRUCKS *with the motor in the drive wheel* SHORTEST TURNING RADIUS — GREATEST POWER



*Send
for this
New Book*



CLARK ELECTRIC AND GAS POWERED
FORK TRUCKS
AND INDUSTRIAL TOWING TRACTORS



INDUSTRIAL TRUCK DIVISION • CLARK EQUIPMENT COMPANY • BATTLE CREEK 67, MICH.
Please send me the new Hand Truck Booklet

Name _____
Firm Name _____
Street _____
City _____ Zone _____ State _____

AUTHORIZED CLARK INDUSTRIAL TRUCK PARTS AND SERVICE STATIONS IN STRATEGIC LOCATIONS

TWO POWER TYPES

1

ELECTRO-LIFT

BATTERY POWER—ELECTRIC MOTOR DRIVE

New-type compound motor develops *more* power than any other hand truck . . . Economical consumption of power means longer work periods . . . Ample reserve power available when required . . . Automatic acceleration prevents abuse, provides smooth, fast "getaway" . . . Speed variations are slight with or without load—reducing operator fatigue . . . Soft, dynamic braking protects loads . . . Lift motor, pump, relief valve, check valve and sump in single compact unit . . . The *only* short truck with space for batteries up to and including 19-plate.

2

HYDRO-LIFT

GAS-ENGINE POWER—HYDRAULIC MOTOR DRIVE

Entirely new in the field of Materials Handling . . . 24-hour ramp service every day! . . . Hydraulic power infinitely smoother than any other type . . . Heavy-duty vane-type hydraulic units for continuous efficiency and long life . . . Effortless finger-tip reversal of direction . . . Automatic torque multiplication assures ample reserve power when needed . . . Hydraulic pump powers both drive and lift.

Compare CLARK machines with any and all others of their type! You'll find they excel because they give you:

- Shortest turning radius
- Shortest wheel base, giving better load distribution
- Greater underclearance to prevent "hanging up"
- Greatest accessibility for maintenance
- Reduced wear on rubber and floor because of larger (14") drive tire. This tire carries greater load, relieving burden on rollers
- Drive motor mounted in the wheel
- Compact, fully enclosed drive unit
- Lifting rams self-aligning and instantly accessible
- Rugged frame, and largest main carrier bearing
- Largest mechanical brake

The full story of these Clark Quality trucks, designed to *give industrial users what they want*, is told in a booklet that is yours for the asking. Just fill in the coupon, attach it to your letterhead and mail it.

PRODUCTS OF CLARK—TRANSMISSIONS • FORK TRUCKS & TRACTORS • AXLE HOUSINGS • GEARS AND FORGINGS • RAILWAY CAR TRUCKS • ELECTRIC STEEL CASTINGS • AXLES • TRACTOR UNITS

Write

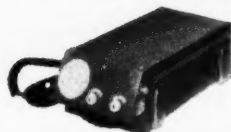
FLOW



SPANS THE GAPS



**"HANDIE-TALKIE"
RADIOPHONE**
\$250 (plus federal
excise tax) Standard
model, complete with
dry batteries, hand set
and antenna.



New "UNI-CHANNEL"
complete mobile, dash mount,
\$375— (plus fed. tax)

... and speeds up materials handling

... at Thompson Products, Inc. (Cleveland, Ohio)

Thompson's crew of fork-lift and platform truckers have increased the number of dispatches handled from 40 to 170 per 8-hour day. Spurred by 1950 competitive conditions, factories by the score are turning to MOTOROLA 2-WAY RADIO for surer, faster liaison between their dispatchers and crews.

SPECIFY MOTOROLA, AND YOU GET THE BEST!

The high standards of engineering excellence, set by the world leaders in 2-way mobile radio, is built into all MOTOROLA equipment. No less than eight exclusive improvements make MOTOROLA your clear choice!... And when you buy MOTOROLA, you'll be paying actually less for the greater value included!

☐ Handie-Talkie Units ☐ Industrial Mobile Systems
☐ Railway Radio ☐ Microwave ☐ Supervisory Control

Name.....Phone.....

Company.....Position.....

Address.....Zone.....

City.....State.....

Write

Motorola

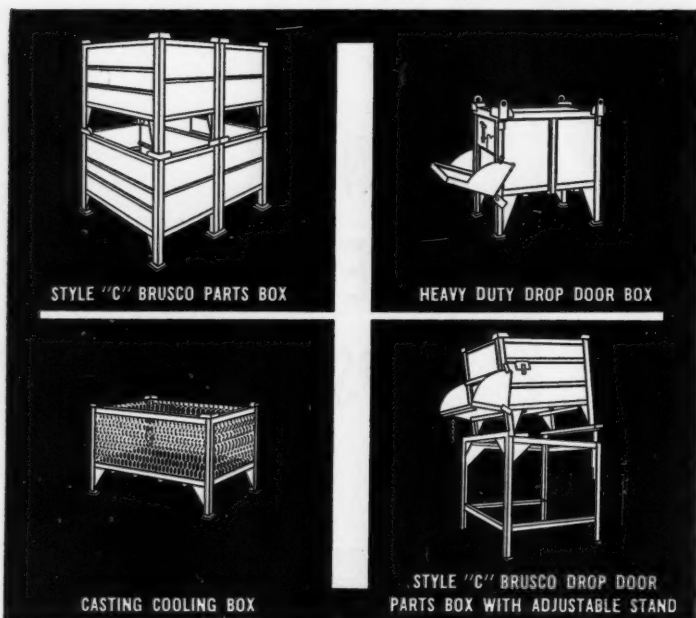
COMMUNICATIONS & ELECTRONICS DIV 4545 Augusta Blvd., Chicago 51

Complete Radio Communication Systems for Industry

Circle No. 9 on Reader Service Card for more information

IS YOUR PLANT HANDLING PRODUCTION PARTS WITH PEAK EFFICIENCY?

Let **BRUSCO** show you how to hang on to parts handling dollars that you may be losing.



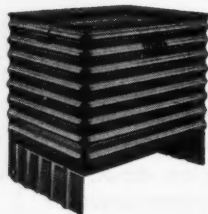
1. **BRUSCO** saves all kinds of valuable space when it comes to handling and storage. Units are easily stacked or tiered to make full use of vertical space, leaving more floor space for production work and machinery.
2. **BRUSCO** is engineered to work with every method of material handling.
3. **BRUSCO** is all steel, welded for strength and rigidity and fabricated with the correct gauge to meet your handling requirements.

Shown above are a few standard items of the **BRUSCO** Material Handling Line. These and many other units of **BRUSCO** equipment can be built to fit your particular handling conditions. Write for full information. If you have a handling problem, let **BRUSCO** beat it.

HERE'S A **Brusco** BUY!

Parts Box No. 524

A standard parts box with 14 gauge corrugated steel body and 7½" underclearance, 26" wide; 36" long; 26" deep. Loads up to 3000 lbs. with 14 cu. ft. capacity. Tiering plates and/or crane lugs at slight additional cost. Available in special sizes.



DELIVERY
IN 30 DAYS **\$26.50** each

BRUSCO

HANDLING EQUIPMENT

BRUMMELER STEEL PRODUCTS CORPORATION

1410 Ionia Ave. S. W.,

Grand Rapids, Michigan

Circle No. 10 on Reader Service Card for more information

LITERATURE

featured in ads

The real savings in time and money that skillful use of 2-way radio can give you are pointed up in latest literature offered by Motorola, Inc.

Circle No. 9 on Reader Service Card

Their line of heavy-duty case numbers, used for printing easy-to-read identification on shipping containers, are shown in newest Wm. A. Force and Co. literature.

Circle No. 86 on Reader Service Card

An 8-page catalog offered by Colson Equipment & Supply Co. shows its Cesco dumper in action, gives specs and prices on all Cesco models.

Circle No. 80 on Reader Service Card

All the details on its custom-tailoring services to handle your conveyor needs are given in Samuel Olson Mfg. Co.'s latest literature.

Circle No. 139 on Reader Service Card

Complete descriptive literature on Allis-Chalmers tracto-shovels is free for the asking from that advertiser.

Circle No. 11 on Reader Service Card

American Chain & Cable has put together a booklet that gives you all the info you need to see which of its cable assemblies you can use.

Circle No. 27 on Reader Service Card

A peck of timely information about slings and sling accessories is contained in the "Sling Data Book" offered to readers by John A. Roebbling's Sons Company.

Circle No. 8 on Reader Service Card

Its general catalog on gravity and power conveyors tells you all about the models you have to choose from in the Standard Conveyor Company line.

Circle No. 131 on Reader Service Card

Interested in guided pallets? The Rapids-Standard Co., Inc., tells all about them, shows how they're used in its newest booklet on the subject.

Circle No. 14 on Reader Service Card

Its standard line of skids, semi-live skids, dollies and floor trucks is illustrated in latest Ironbound Box & Lumber Co. literature.

Circle No. 141 on Reader Service Card

All the facts on Exide batteries, made by The Electric Storage Battery Co., are shown you in just-published Exide literature.

Circle No. 16 on Reader Service Card

John W. Hobbs Corp. tells you how to get rid of maintenance guesswork using

its engine hours meters in latest Hobbs literature.

Circle No. 71 on Reader Service Card

Details on its new Bantam crane, with 5-ton capacity on rubber tires, are given in latest Schield Bantam Co. literature.

Circle No. 124 on Reader Service Card

Bulletin 391 from Manning, Maxwell & Moore, Inc., tells you where and how to put in Budget hoists to keep up with production schedules.

Circle No. 137 on Reader Service Card

"In Dollars & Sense" is the tag Roura Iron Works gives a new detailed brochure telling about its self-dumping hoppers.

Circle No. 168 on Reader Service Card

The Mercury Mfg. Co. makes it easy for you to learn all about its new Jeep Model 230, a 2000-lb. capacity fork lift truck, in latest literature.

Circle No. 19 on Reader Service Card

The Belt Corporation's Model S Handy-Handler is a lightweight general-purpose that Belt describes in its latest booklet.

Circle No. 69 on Reader Service Card

Buyers' Guide for Freight Elevators is a book Westinghouse Electric Corp. has published to help you choose the right elevator for your plant.

Circle No. 4 on Reader Service Card

The 1/2-ton model of Yale & Towne Mfg. Co.'s Load King hand hoist weighs just 37 lbs. Latest Y & T bulletin gives you the low-down on it.

Circle No. 24 on Reader Service Card

An illustrated folder The Elwell-Parker Electric Co. has ready for you contains illustrations and specs on newest Elwell-Parker industrial trucks.

Circle No. 5 on Reader Service Card

The full story on truck running-time recorders is told in literature offered by The Service Recorder Co. Recorders show exactly how much work you're getting out of your trucks.

Circle No. 118 on Reader Service Card

The Paltier Corporation makes self-aligning stacking pallets that make it possible to palletize just about anything. New Paltier booklet tells about them.

Circle No. 135 on Reader Service Card

Bulletin A-60 from Flexible Steel Lacing Co. shows where its conveyor belt lacing can be put to work in your plant to save money.

Circle No. 79 on Reader Service Card

Stenciled identification on your packages assures that names and addresses




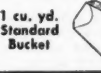


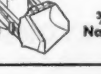


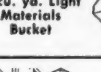




How to Handle a Variety of Jobs

on a Single, Lower Investment



Use the
Allis-Chalmers
HD-5G...

AND THESE 14 TRACTO-SHOVEL ATTACHMENTS

 V-type Snowplow	 Drag Bucket	 Tine Fork
 1 cu. yd. Standard Bucket	 Teeth For All Buckets	 Rock Fork
 3/4 cu. yd. Narrow Bucket	 Heavy-duty Bulldozer Blade	 Crane Hook (5,000 lb. lifting capacity)
 2 cu. yd. Light Materials Bucket	 Heavy-duty Angledozer Blade	 Trench Hoe
 1 cu. yd. Rock Bucket	 Lift Fork (4,000 lb. lifting capacity)	<div>Interchangeable in a Few Minutes!</div>

You can use this versatile combination inside and outside your plant . . . all year 'round, on all kinds of work. Lift, carry and load materials of all kinds, stockpile coal; feed hoppers, maintain yards and roads, spot cars, haul machinery, plow or load snow, bulldoze or excavate. There's no end to its usefulness with these specially designed attachments. Get all the facts NOW . . . ask for a demonstration at your plant. Mail this coupon today!

The usefulness of the HD-5 Tractor is further widened by other allied equipment; cranes, skid loaders, winches, 2-wheel scrapers, rippers and rollers.

ALLIS-CHALMERS
Tractor Division, Dept. F
Milwaukee 1, Wisconsin

☐ Please send me complete descriptive literature on the HD-5G and Tracto-Shovel.

☐ Please have nearest dealer arrange a demonstration at my plant.

Name

Company

U. S. A. Street

City State

ALLIS-CHALMERS

TRACTOR DIVISION • MILWAUKEE 1, U. S. A.

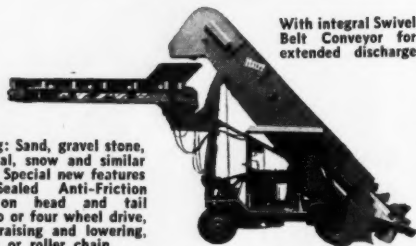
Circle No. 11 on Reader Service Card for more information

HAISS Material Handling BUCKET LOADERS

LOAD 3 TO 8 YARDS PER MINUTE



One man operation
Self-Propelled
Self-Feeding



With integral Swivel
Belt Conveyor for
extended discharge

For loading: Sand, gravel, stone, topsoil, coal, snow and similar materials. Special new features include Sealed Anti-Friction Bearings on head and tail shafts, two or four wheel drive, hydraulic raising and lowering, manganese or roller chain.

CONVEYORS • CAR UNLOADERS



TROUGH OR FLAT
BELT CONVEYORS

For loading sand, gravel, coal and similar bulk materials from cars or piles to trucks.



PACKAGE
CONVEYORS

For handling bags, boxes, crates, cartons, etc. Portable or stationary mounting. All types—All sizes.



UNDERCAR
UNLOADERS

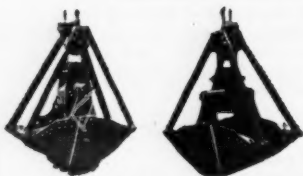
Heavy duty for handling crushed stone, gravel, sand, coal and similar materials. Capacity up to 5 tons per minute.

SECTIONAL CONVEYORS

Channel Frame or Lattice Frame construction made in easily assembled individual sections for permanent or portable installation. All sizes and capacities available. Trough belt—for handling crushed stone, sand, gravel, coal and similar materials. Flat belt type—for handling bags, boxes, packaged materials.



CLAMSHELL BUCKETS



EXCAVATING-REHANDLING

Heavy duty buckets for digging and trenching, dredging and rehandling. Capacities 1/4 to 3 yards. Special narrow buckets available for trenching. Ask for bulletin H-175.

For further information write, 'phone or wire. Experienced Hais representatives are located in all principal cities.

George Hais Mfg. Co., Inc. division of Pettibone Mulliken Corp.

141st to 144th St. on Park Ave.
New York 51, N. Y.
'Phone Mott Haven 5-2200

4700 W. Division St.,
Chicago 51, Ill.
'Phone Spaulding 2-9300



NEW YORK - CHICAGO - CEDAR RAPIDS

Circle No. 12 on Reader Service Card for more information

will be easy to read. Marsh Stencil Machine Company offers literature that tells you about its line of marking equipment.

Circle No. 85 on Reader Service Card

"George" is the almost automatic tote box truck Rolock, Inc., makes. Rolock's newest folder shows what "George" might do for you.

Circle No. 77 on Reader Service Card

Mansaver grabs are used to cut waste by increasing handling efficiency. Latest Mansaver Industries, Inc., booklet tells you how.

Circle No. 134 on Reader Service Card

The Frank G. Hough Co. has filled a new booklet with data and application photos to show you where Hough Pay-loaders might come in handy in your operation.

Circle No. 25 on Reader Service Card

Bulletin No. 50 from The Moto-Truc Co. gives you the specs on its battery operated walkie pallet truck.

Circle No. 130 on Reader Service Card

Ben Franklin had a lot of things to say in his time that still make sense. Acme Steel Co. has collected a batch of his comments in a booklet free to you.

Circle No. 31 on Reader Service Card

Bethlehem bridge ramps, made by Moffat Steel Co., are made to bridge gaps from one inch to six feet. Moffat literature illustrates them, gives prices.

Circle No. 130 on Reader Service Card

Over 95 standard models of trucks and trailers are made by The Kilbourne & Jacobs Mfg. Co. Their new catalog shows all the latest models.

Circle No. 119 on Reader Service Card

Pictures and drawings show over 500 different conveyor systems in a new booklet put together by Anchor Steel & Conveyor Co. Maybe one of them will give you an idea for your conveyor problem.

Circle No. 72 on Reader Service Card

Industrial Marking Equipment Co. tells you about its Auto Printer that eliminates hand stenciling, saves time and money in packaging in a new catalog.

Circle No. 87 on Reader Service Card

Illustrated booklets offered by Truscon Steel Company show their complete line of steel boxes and skids.

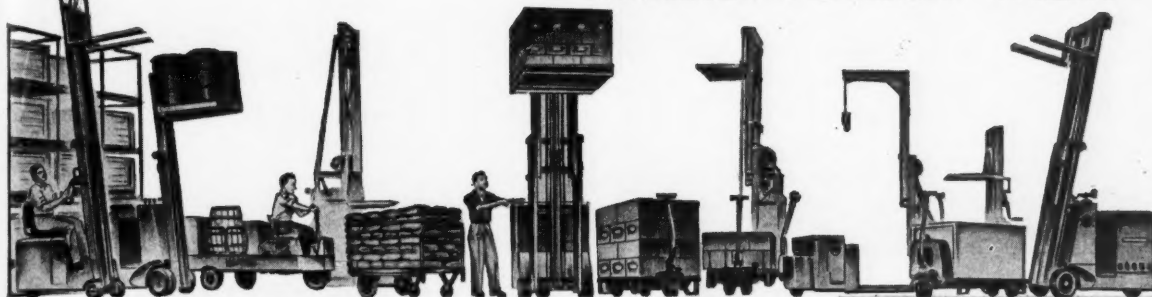
Circle No. 26 on Reader Service Card

The Unit 357 crane is self-propelled, mounted on pneumatic tires. Unit Crane and Shovel Corp. shows you how it might save you money in latest literature.

Circle No. 190 on Reader Service Card

In All Principal Cities

"WHERE TO BUY THEM"



The "MASTER" Line of MATERIALS HANDLING EQUIPMENT

SPACEMASTER ELECTRIC FORK TRUCKS
SPACEMASTER GAS FORK TRUCKS
MASTER JACKSTACKERS
MASTER JACKLIFT ELECTRIC TRUCKS
MASTER JACKTRACTORS
TOTEMASTER GAS TRUCKS
MASTER JACKLIFT TRUCKS
MASTER QUICKLIFT TRUCKS
MASTER SPEEDLIFT TRUCKS
MASTER REDILIFT TRUCKS
POWERMASTER STACKERS
SHIPMASTER (All steel
2 Wheel) TRUCKS
WELDMASTER TRUCKS
LOADMASTER RACKS

CONSULT
Your
PHONE DIRECTORY



The "MASTER" Line
of Materials Handling Equipment
Designed, Engineered, and Manufactured by

LEWIS-SHEPARD

LEWIS-SHEPARD PRODUCTS INC., 115 WALNUT ST., WATERTOWN, 72, MASS.

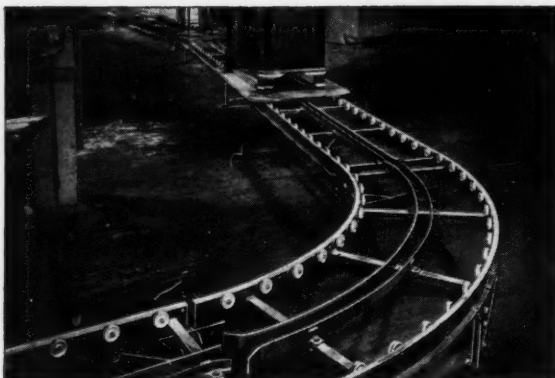
Midwest Plant: CRAWFORDSVILLE, INDIANA

"MASTER" Line DISTRIBUTORS

AKRON, OHIO, Tel. University 6731
ALBANY, N.Y., Tel. 2-4995
ALBUQUERQUE, N.M., Tel. 2-9893
ATLANTA, GA., Tel. Vernon 4756
BALTIMORE, MD., Tel. Belmont 0715
BATTLE CREEK, MICH., Tel. Battle Creek 3-7272
BUFFALO, N.Y., Tel. Delaware 8180
BOSTON, MASS., Tel. Watertown 3-0070
CHARLESTOWN, W. VA., Tel. Radford 3429
CHARLOTTE, N.C., Tel. Charlotte 4-4774
CHICAGO, ILL., Tel. Whitehall 4-2528
CINCINNATI, OHIO, Tel. Dunbar 0579
CLEVELAND, OHIO, Tel. Utah 1-7272
COLUMBUS, OHIO, Tel. Adams 3504
CONCORD, N.H., Tel. Concord 3925
DALLAS, TEXAS, Tel. C-4713
DAYTON, OHIO, Tel. Hemlock 6385
DENVER, COLORADO, Tel. Keystone 5500
DETROIT, MICH., Tel. University 4-5323
HARTFORD, CONN., Tel. Plainville 1282
HONOLULU, HAWAII, Tel. 65067
HOUSTON, TEXAS, Tel. Atwood 8-6523
INDIANAPOLIS, INDIANA, Tel. Talbot 3757
JACKSONVILLE, FLA., Tel. Jacksonville 4-4503
KANSAS CITY, MO., Tel. Grand 1311
KNOXVILLE, TENN., Tel. 2-1675
LOS ANGELES, CALIF., Tel. Madison 6-4606
LOUISVILLE, KY., Tel. Wabash 6551-2
MEMPHIS, TENN., Tel. 39-1125
MIAMI, FLA., Tel. 48-2815
MILWAUKEE, WISC., Tel. Franklin 2-1060
MOLINE, ILL., Tel. Moline 6-1157
NEW HAVEN, CONN., Tel. Milford 2-1136
NEW ORLEANS, LA., Tel. Canal 8724
NEW YORK, N.Y., Tel. Longacre 4-3147,
Bryant 9-8274, Union 6-5600
OMAHA, NEB., Tel. Walnut 8194
PEORIA, ILL., Tel. 6-6904
PHILADELPHIA, PA., Tel. Allegheney 4-1140
PHOENIX, ARIZ., Tel. 48155
PITTSBURGH, PA., Tel. Penhurst 1-6522
PORTLAND, MAINE, Tel. Portland 3-7939
PORTLAND, OREGON, Tel. Atwater 9391
PROVIDENCE, R.I., Tel. Jackson 1-3523
RICHMOND, VA., Tel. 6-1806
ROCHESTER, N.Y., Tel. Main 7892
ST. LOUIS, MO., Tel. Lucas 8839
SALT LAKE CITY, UTAH, Tel. 9-2171
ST. PAUL, MINN., Tel. Westor 6129
SAN FRANCISCO, CALIF., Tel. Sutter 1-7418
SCRANTON, PA., Tel. Scranton 9400
SEATTLE, WASH., Tel. Seneca 8247
SOUTH BEND, INDIANA, Tel. 4-2212
SPRINGFIELD, MASS., Tel. Westfield 272
SYRACUSE, N.Y., Tel. 2-9521
TOLEDO, OHIO, Tel. Main 7306
WORCESTER, MASS., Tel. W. Boylston 387

IN CANADA
MONTREAL, Tel. Lancaster 4242
TORONTO, ONT., Tel. Plaza 6600
HALIFAX, N.S., Tel. 36000
VANCOUVER, Tel. Cherry 5121
WINNIPEG, ONT., Tel. 39040

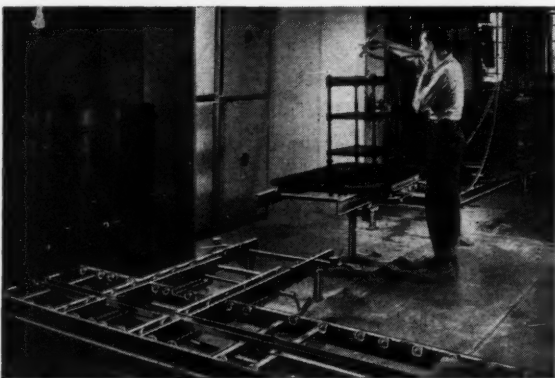
Circle No. 13 on Reader Service Card for more information



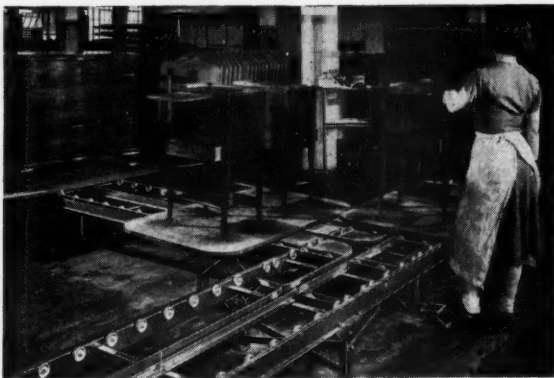
GRAVITY SECTION flows materials down production line on pallets guided by center rails. Timing of pallets placed on line determines general pace.



POWER SECTION pushes pallets along horizontal line or elevates them to higher gravity sections. Motor shuts off when pallets leave power section.



WORK STATION, air-operated, lifts pallet and permits it to revolve like a turntable. Workman's operating time can vary with each piece.



SPUR SECTION moves pieces on and off main line, serves as simple line junction. Switching is done by means of a foot pedal.

New low-cost conveyor gives quality control and variable pace on production line

Here's a radically different approach to production line problems—the new, Guided Pallet Conveyor* system, which permits better quality work, at greater speed, and at lower cost than any previous system.

Well within the budget of any plant, the Guided Pallet system is adaptable to widely varying assembly, processing and finishing operations. Damage to products is minimized and production rate stepped up, because handling duties are eliminated. Traffic congestion is avoided, and work-in-process greatly reduced.

QUALITY CONTROL • At work points, air-lift work station turntables allow pallet rotation for convenient work positioning so that time may be varied as more difficult work comes to the station. This insures fine quality, but keeps production going at average rate of speed with which the line is loaded.

FLEXIBILITY • New layouts can be made easily and quickly, whenever necessary, without costly plant shutdowns. Re-routing is as simple as rearranging a toy train track.

COST • Because the Guided Pallet Conveyor system consists chiefly of gravity conveyors, the cost is less than half that of other types—and installation cost is actually 75% lower!

FURTHER INFORMATION AVAILABLE • Guided Pallet technical information and typical application photographs may be obtained by writing to The Rapids-Standard Company, Inc., 367 Rapistan Bldg., Grand Rapids 2, Michigan.

- To determine Guided Pallet application in your plant, consult your Rapids-Standard representative.

* PAT. PEND.

Circle No. 14 on Reader Service Card for more information



Advertisement



CUT HIGH COSTS...

YALE HANDLES MORE FOR LESS

Making is mostly moving. That's why maximum production economy can only be achieved with efficient tools to lift, transport, stack, and weigh materials.

Yale Material Handling Machinery is functionally designed to handle more for less. Thousands of companies are operating with vastly improved man-hour productivity and

lower costs because of the speed and effort-saving efficiency of Yale tools.

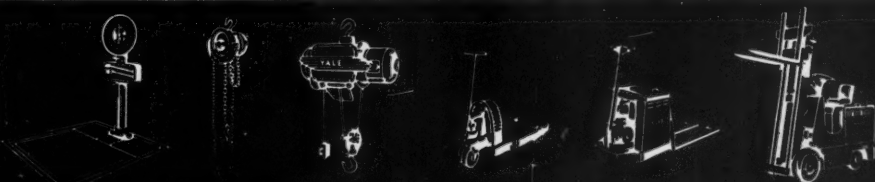
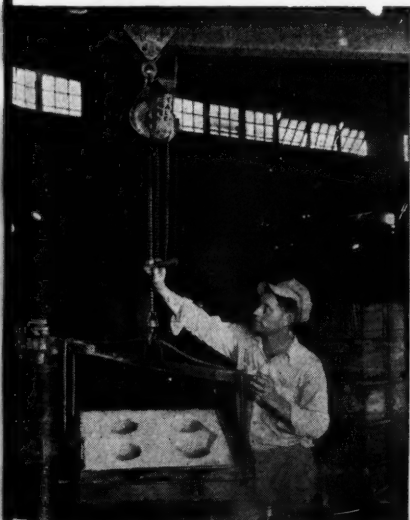
Time is money. Get the most out of *your* production dollars. Put Yale Material Handling Machinery to work in *your* plant. Our nearby representative will gladly demonstrate how correct selection and application can cut costs substantially. Make a date. Phone or write today.

THE YALE & TOWNE MANUFACTURING COMPANY

Philadelphia Division

Dept. L-190

Philadelphia 15, Pa.



SCALES—Industrial • HOISTS—Hand and Electric • TRUCKS—Hand Lift • Electric • Gasoline • Diesel

ALL DAY LONG.... still going strong on **EXIDE-IRONCLAD BATTERY POWER**

Round-the-clock performance! No mechanical troubles! No unscheduled down time! You get that kind of materials-handling with battery-electric trucks and Exide-Ironclad Batteries. They provide:

- **instant surge of power** to meet all demands in *start-stop, lift-and-shift* manipulations... plus finger-tip control for split-second operations, easy maneuvering, accurate spotting.
- **uniform speed throughout shift**, with trucks handling as much tonnage during last hour as during first.
- **exceptionally long life**—proved on more than 100,000 heavy-duty jobs.
- **low operating costs**—batteries are easy to keep charged for they absorb a very high percentage of charging current. Recharging costs as low as 2 cents per K.W.H. of battery capacity.
- **low maintenance costs**—no moving parts to get out of adjustment or break... easy to charge, change, add water, keep records of water additions, gravity and voltage... seldom costs more than 15 cents per shift to maintain.
- **inherent safety**—battery power provides quiet operation with less worker fatigue; no fire hazard, no contaminating fumes; no vibration to jar work in transit; no oil seepage on floors to create accident hazards.
- **wide range of sizes** for every make of battery-electric truck; compact construction permits standardization.

Combined, these and other Exide-Ironclad characteristics assure you dependable performance, day after day... for years.

**Exide-Ironclad Batteries are the
Best Power Buy...AT ANY PRICE**

Write for more facts and **FREE** copy of Exide-Ironclad Topics. It contains latest developments in materials-handling... shows actual case histories.



THE ELECTRIC STORAGE BATTERY COMPANY
Philadelphia 32

Exide Batteries of Canada, Limited, Toronto

**DEPENDABLE
POWER**



"Exide-Ironclad"
Reg. Trade-mark U.S. Pat. Off.

1888...DEPENDABLE BATTERIES FOR 62 YEARS...1950

Circle No. 16 on Reader Service Card for more information

LYON-Raymond **SPACEmaker** Electric Tiering Trucks for handling double-face pallets

Model E25T
2000 lb. Capacity

SPACEmaker

**Right Angle Tiers 4 Ft. Pallet Loads
in 6 Ft. Aisle**

Its exclusive design principle makes possible such efficient, close-quarter operation that conventional aisle space can be reduced as much as 40%. Frequently enough new space is made available to accommodate an additional row of 4' by 4' pallets.

Aisle space is expensive. Turn it into *profitable* storage space. You can do it with SpaceMaker. See it! Better still, arrange a demonstration—it will amaze you. Write for full information in Bulletin #701—no obligation.

EXHIBIT AND DEMONSTRATION

at the

POWER SHOW

NEW YORK CITY

Nov. 27-Dec. 2

Patent Applied for

LYON-Raymond

CORPORATION

Electric Power Trucks . . . Skid and Pallet Lifts
Hydraulic Elevating Equipment
Positioning . . . Sheet and Die Handling

3334

**Madison St.
GREENE, N.Y.**



The Straddle Type SpaceMaker, designed to handle double-face pallets, will add many square feet of usable storage area to your warehouse. In addition, its low weight factor permits operation in areas where floor or elevator capacities prevent the utilization of counter-weighted fork truck operation.

Combined in this amazing new conventional truck are the best features of both the riding type and walking type industrial truck PLUS . . .

LIGHT WEIGHT

Desirable on elevators and upper floors.

SHORT LENGTH

Will right-angle stack in 5' to 6' aisles.

MAGIC MANEUVERABILITY

Increases space-making characteristics and adds to speed of operation.

Circle No. 17 on Reader Service Card for more information

FLOW • NOVEMBER, 1950

17



NEW!

U.S. ROYALITE TOTE BOX WHICH BOTH STACKS



..AND NESTS



- ★ SELF-STACKING BOXES—
SEE INSIDE AT A GLANCE.
- ★ SELF-NESTING—SAVE
STORAGE SPACE.
- ★ NO METAL RIMS, HINGES, WIRES TO
REQUIRE REPAIR OR COLLECT DIRT
AND RUST.
- ★ MOLDED RIMS GIVE GRIP
ON ALL 4 SIDES.
- ★ NO CREVICES TO COLLECT
BACTERIA, DIRT OR DUST.
- ★ GREAT RANGE OF
WIDTHS AND DEPTHS.
- ★ 4 COLORS FOR FAST
DEPARTMENTAL SEGREGATION.

Add to these, the other famous Royalite advantages, and you will see why our new design is widely acclaimed by both employees and management.



U.S. ROYALITE IS...

- | | | |
|-------------------|-----------------|---------------------|
| • Lightweight | • Non-warping | • Not affected by |
| • Quiet to handle | • Non-corrosive | most acids, alkalis |
| • Shatterproof | • Waterproof | • Odorless |
| • Non-splintering | • Stainproof | • Non-conductive |



UNITED STATES RUBBER COMPANY

Serving Through Science

2638 North Pulaski Road, Chicago 39, Illinois



it's all

NEW!



130" Extreme Lift



59½" Free Lift



83" Collapsed Height

Mercury JEEP

MODEL 230

**2000 LB. CAPACITY
TILTING—TIERING**

It's completely new from stem to stern. Increased fork elevation... shorter turning radius... increased operator efficiency. The new MERCURY Jeep Model 230 is unmatched for versatility and operating efficiency. Check these outstanding design advancements.

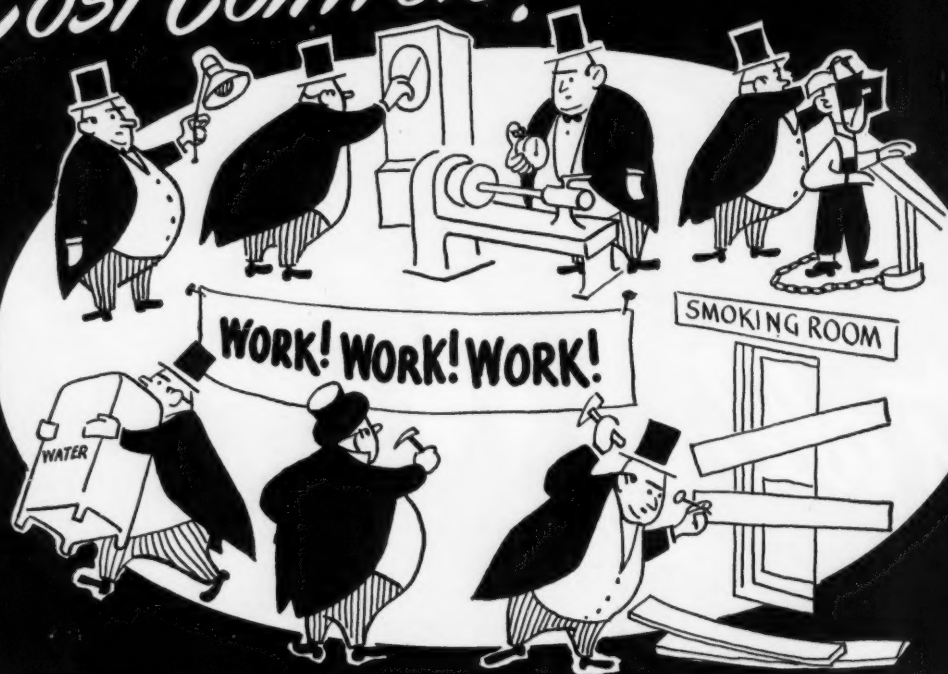
- ★ 130" extreme lift
- ★ 83" collapsed height
- ★ 59½" free lift
- ★ 60" turning radius
- ★ Inclined automotive steering
- ★ Foot pedal acceleration
- ★ Convenient hoist and tilt controls
- ★ Cushion type tires
- ★ Simple, single cylinder, low pressure hydraulic lift with cross suspension
- ★ Shockless center point steering
- ★ Magnetic contactor travel control
- ★ Unit power plant with double reduction gearing.

Completely described in
Bulletin 295. Write for your free copy.



The Mercury Manufacturing Company
South Halsted Street • Chicago 9, Illinois

Cost Controls?



There are many ways of lowering production costs —
but, **POWELL PROVEN MATERIAL HANDLING EQUIP-
MENT PROVIDES MAXIMUM SAVINGS**

TRYING to operate your plant at its greatest efficiency? Then check your materials handling operation. In the average plant, handling of materials and products amounts to more than a third of total product cost. New methods and techniques and Powell **Job Designed** containers have slashed excessive costs to a fraction.

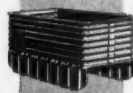
For more than 30 years Powell has designed and built the most efficient handling equipment available anywhere, because Powell designs for the job — and at standard costs. Take advantage of this experience. Call in Powell's material handling specialists. They'll be happy to look over your operation at no cost to you. Write today, or get in touch with the Powell representative nearest you. Offices in principal cities — listed in yellow pages of phone directories.

Send Inquiries to Dept. 211

THE POWELL PRESSED STEEL CO.
HUBBARD OHIO

ORIGINATORS OF COLD-FORMED ALL-STEEL HANDLING EQUIPMENT

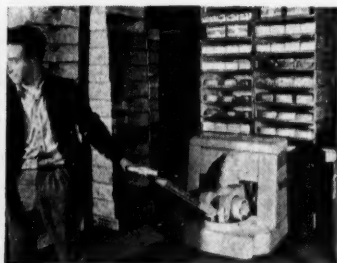
POWELL
PRESSED STEEL



SINCE 1920

NOW "STUBBY" a shorter *WORKSAVER*

it's a **YALE WORKSAVER** electric truck



FOR NARROW AISLES



FOR FREIGHT CARS



FOR HIGHWAY TRUCKS

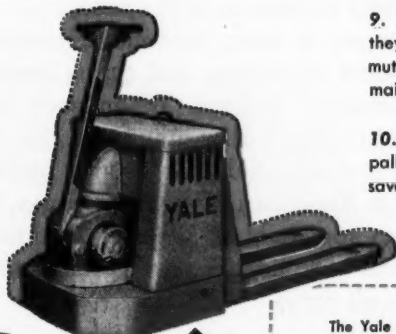
**STUBBY OUTSIDE
STURDY INSIDE!**

Squeezing through narrow congested areas is a cinch for "Stubby." Here's why: "Stubby" is 6 inches shorter than other Worksaver models. But it's cut down in length only . . . all the efficient

qualities standard in Yale Worksavers are part of "Stubby," too! "Stubby" Worksavers can be had in pallet or platform lengths to suit your exact needs . . . in 4,000 and 6,000 lb. capacities.

Only "Stubby" Worksavers have all these advantages:

- 1. Operational Controls On The Handle.** Dual controls . . . right or left-hand operation for two forward and reverse speed travel. Push buttons for elevating and lowering . . . dual control warning signal.
- 2. Power-packed Drive Unit** has improved motor efficiency.
- 3. "Dual-Lift" Mechanism . . . new . . . better.** Combines 2 hydraulic lifting cylinders with articulating connection to lifting linkage.
- 4. Easy Steer . . .** widely separated tapered roller load bearing and 16" diameter, ball bearing steering ring with built-in, self-aligning features. Greater than right angle turning in either direction.
- 5. Positive Acting Safety Brake** effective instantly with handle in either upright or horizontal position.
- 6. Dual Trailing Wheels** in each fork of pallet truck provides wide floor contact . . . easier turning . . . greater floor protection.
- 7. Large Diameter Drive Wheel** has more rubber . . . cleated treads for better traction and longer wear.
- 8. Double Battery Protection . . .** batteries assembled in steel case . . . fit in Worksaver's totally enclosed heavy steel battery compartment.
- 9. No Flexing Of Electrical Wires . . .** they're fed into handle controls from commutator at fulcrum point. Eliminates breakage, maintenance . . . reduces fire hazard.
- 10. Spark Enclosed Features** available on pallet and platform type "Stubby" Worksavers.



"Stubby's" 6 inch shorter length comes in handy in tight spots.

DETACH AND MAIL COUPON NOW!

The Yale & Towne Manufacturing Company
Department M-28
Roosevelt Boulevard and Haldeman Avenue,
Philadelphia 15, Pa.

Please send me:

- ☐ Pallet Type "Stubby" Bulletin—P-1207
☐ Platform Type "Stubby" Bulletin—P-1206
☐ The name of the nearby Yale representative

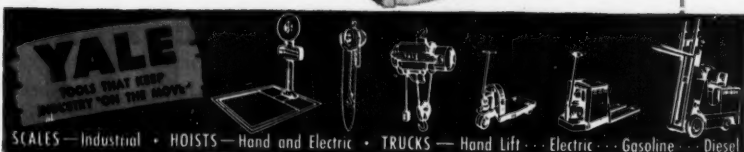
Name.....

Company.....

Address.....

City and Zone.....State.....

M-19



Circle No. 21 on Reader Service Card for more information



HERE'S THE CRANE FOR
**CONSTANT
 SERVICE**
at **HIGH SPEED**

If your handling operations must be "on the go all the time and fast, too", then investigate this American MonoRail Crane.

Coupled with constant service at high speed, it offers the advantages of easy movement, rugged construction, low-cost operation and quick installation. But the No. 1 advantage is articulated trolleys. When each trolley wheel carries its share of the load in perfect alignment with the craneway tracks and all possible friction is eliminated, the result is perfectly articulated trolley travel. Applied to American MonoRail Cranes, these articulated trolleys permit operating speeds of 500 feet per minute and constant service. Breakdowns are practically eliminated and the crane is ready for fast service at all times.

An American MonoRail engineer will gladly give you all the details, or write us about the American MonoRail Constant-Service High-Speed Crane.

THE AMERICAN MONORAIL COMPANY

13129 ATHENS AVENUE

CLEVELAND 7, OHIO

Circle No. 22 on Reader Service Card for more information

Letters to Flow . . .

(Continued from page 6)

scale is an integral part of the conveyor and it is possible to purchase equipment which will eject those items which do not conform to weight specifications.—Ed.

To FLOW:

Will you please advise if you have any material or literature on paper that is being shipped on pallets, and if so, can you advise me what paper company is shipping this way and I will correspond with them direct.—C. E. Treleven, Nekoosa-Edwards Paper Co., Port Edwards, Wis.

The R. R. Donnelly Company, Chicago, is handling split print jobs of national magazines and doing a tremendous job of shipping printed forms. You will probably be able to obtain much valuable data from that operation.—Ed.

To FLOW:

Will you please send us complete tear sheets covering the article, "Stitched Canvas Belting", published in the August, 1950, FLOW? —D. E. Perry, Engineering Dept., International Milling Co., Minneapolis.

Tear sheets are on their way.—Ed.

To FLOW:

Interest In Bulk Handling

Would you please send us the April issue of FLOW magazine. We are very interested in an article by A. S. Hardy, entitled "Bulk Handling of Coal and Clay". We would be very happy to buy this issue. If you do not have an extra copy, would it be possible to give us tear sheets of this article.—R. Forrest Rosenberger, Sales Promotion Dept., Joy Manufacturing Co., Pittsburgh, Pa..



It's a Hard Worker!

Battery industrial trucks such as this husky are the wheel horses of modern material handling systems. They do their heavy work anywhere from 8 to 24 hours a day... week after week, year after year... with little or no complaint. That's dependability!

The surest way to get full value out of these hard-working, revenue-producing trucks is to equip them with rugged, unfailing batteries... the kind that stay on the job, out of the repair shop. Which is another way of saying, "You'll do a better job cheaper with EDISON Storage Batteries."

Edison cells were designed for hard work. They're built of steel inside and out, and their electrolyte preserves the steel. The steel-sheathed active materials can't shed. Edison batteries can't be injured by accidental short-circuiting or reverse charging... or by standing idle during shutdowns... or even by freezing.

Initially, Edison batteries cost a little more. But when you rate them in terms of years worked, tons handled and down-time saved, you'll agree that they're the best investment you can make. Ask any user!

Write for free booklet SB 2039. Edison Storage Battery Division of Thomas A. Edison, Incorporated, West Orange, N. J. In Canada, International Equipment Company, Ltd., Montreal and Toronto.

EDISON



**Nickel • Iron • Alkaline
STORAGE BATTERIES**

Circle No. 23 on Reader Service Card for more information



CAPACITIES:
1/2, 1, 1 1/2 and
2 Tons



So Easy to Handle

Compact. Portable. 1/2-ton model weighs only 37 lbs.! High strength aluminum alloy castings and alloy steels, fewer parts—these factors provide the "carry-around" lightness of the Load King in all capacities.



So Fast to Operate

Efficiency up to 95%! It takes only 20 seconds to hoist a 1,000-lb. load 3 feet. Two tons can be lifted 2.1 feet in 60 seconds. All rotating shafts have ball bearings, parts are precision machined, and the powerful, revolutionary new Synchro-matic load brake acts quick as a wink.

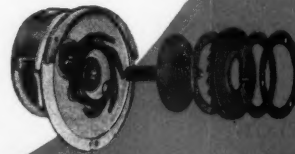


So Easy on Muscles

One-half or 2-ton capacity—the Load King is a one-man hoist! Hand pull force to lift the load is maintained at minimum by its high efficiency. Load King operators aren't droopy and dragged out after a few lifts. Hoisting costs drop.

NO OTHER HOIST HAS THIS, SYNCHRO-MATIC LOAD BRAKE

Employs a new, improved principle of instantaneous brake action—maximum braking power, automatically! 6-tooth pawl engages 24-tooth ratchet at 6 points simultaneously with balanced and cushioned spring pressure . . . no side pressure on bearing surfaces . . . longer pawl life. Stabilizer ring gives a soft, even, lighter hand chain pull—speeds brake release for precise inching when lowering.



D-17



GET ALL THE FACTS

Your Yale Industrial supply distributor will gladly give you complete information about the Load King. Phone him today or mail the coupon to hoist headquarters.



The Yale & Towne Manufacturing Company
Department D-41
Roosevelt Boulevard and Haldeman Avenue,
Philadelphia 15, Pa.

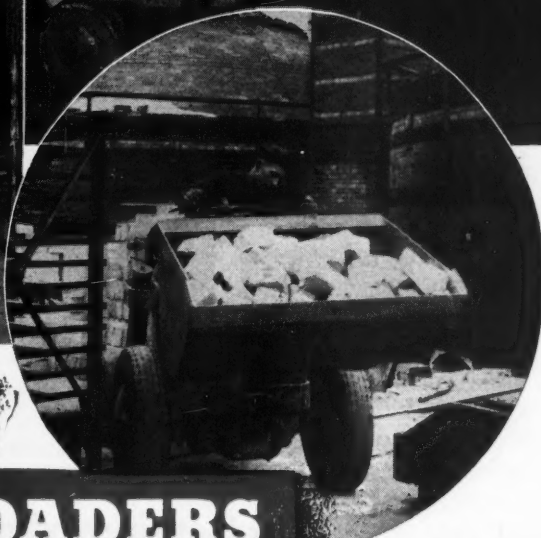
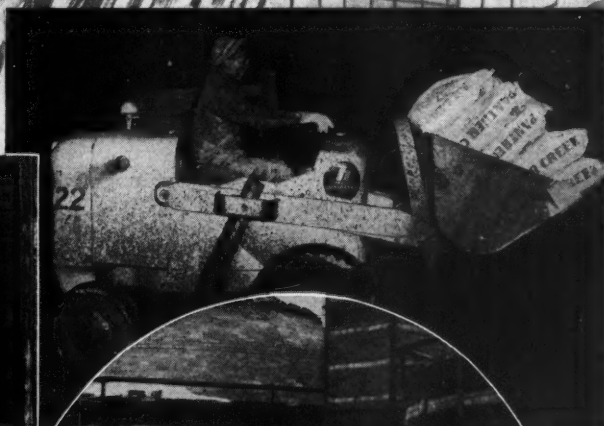
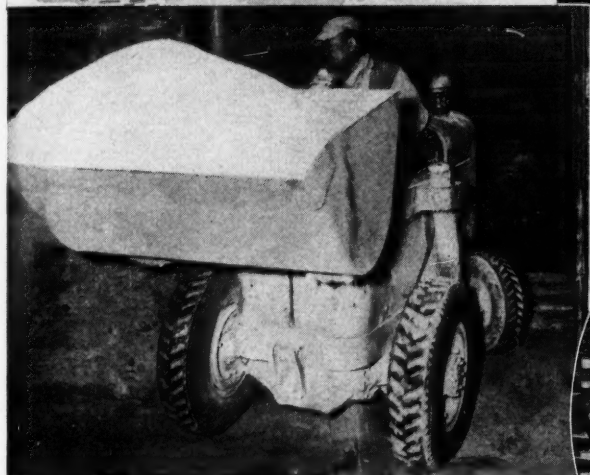
- ☐ Send me Load King Bulletin P-1254
☐ Give me the name of the nearby Yale distributor.

Name.....
Company.....
Address.....
City and Zone..... State.....

Circle No. 24 on Reader Service Card for more information

NOVEMBER, 1950 • FLOW

BULK, BAGS OR BRICKS



It's all the same
to PAYLOADERS

What's *your* business? . . . If bulk material handling is involved, the thousands of "PAYLOADER" owner records in the Hough files contain the names of plants like yours where versatile, rugged "PAYLOADERS" are reducing costs, increasing production and adding flexibility to operations.

"PAYLOADERS" have the power and traction to scoop up big bucket loads of tough, lumpy, granular, sticky or abrasive materials . . . have the speed and maneuverability to carry their loads *fast* outdoors or indoors, over hard surfaces or ground, mud or snow . . . to work in close quarters, to unload box cars. They dump their loads directly into piles, trucks, cars, bins, containers or hoppers—

high or low, slow or fast—by means of controlled hydraulic power.

It will pay you to get complete facts about unique unit-design "PAYLOADERS" and how they can serve you . . . facts based on Hough's 29 years of material handling experience and that of the worldwide Distributor Organization that sells and services them. The Frank G. Hough Co., 731 Sunnyside Avenue, Libertyville, Illinois.

Catalogs about "PAYLOADERS" include many varied application photos and job data. They're yours for the asking, covering the 12 cu. ft. Model HA, the ½ yd. Model HE, the ¾ yd. Model HF, the 1¼ yd. Model HL, or the big 1½ yd. Model HM.



PAYLOADER®

Manufactured by THE FRANK G. HOUGH CO.

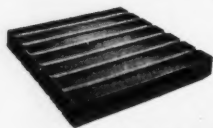


Circle No. 25 on Reader Service Card for more information

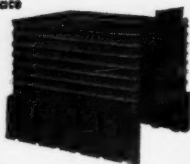


TRUSCON STEEL BOXES and SKIDS

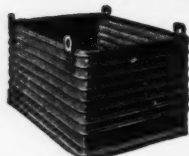
neat as a pin...



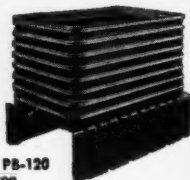
Truscon Double Face
Steel Pallet.



Type PB-650
Truscon Box and
Platform with
sliding End Door.



Type B-80C
Truscon Box
Equipped for
Crane Handling



Type PB-120
Truscon
Steel Box
and Platform



smart as a White Sewing Machine ...

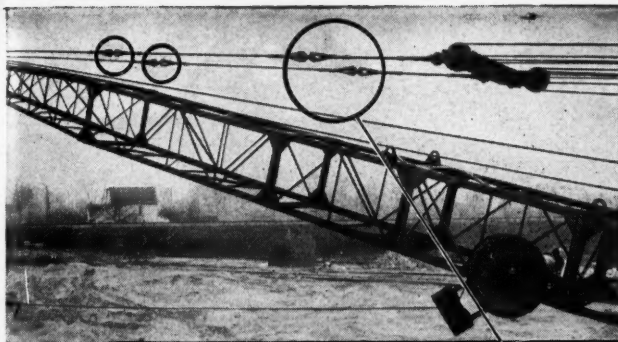
Truscon Steel Boxes
and Skids in the White Sewing Machine
Company, Cleveland, present a picture of extreme factory
neatness and smartness. There's a place for everything...and every-
thing is in its place. Truscon Steel Boxes and Skids are strategically placed
for the most efficient handling, movement and storage of parts and finished
products. No cluttered aisles; no traffic hazards; no helter-skelter hodge-podge
of materials strewn over the floor. Truscon Steel Boxes and Skids can be adapted
to the needs of any industry, producing any type of commodity, for use
with hand- or power-lift trucks or cranes. Truscon has field men who
have helped solve many materials handling problems. These ex-
perienced men can be of valuable assistance to you. Write
for free illustrated literature on Truscon
Steel Boxes and Skids.



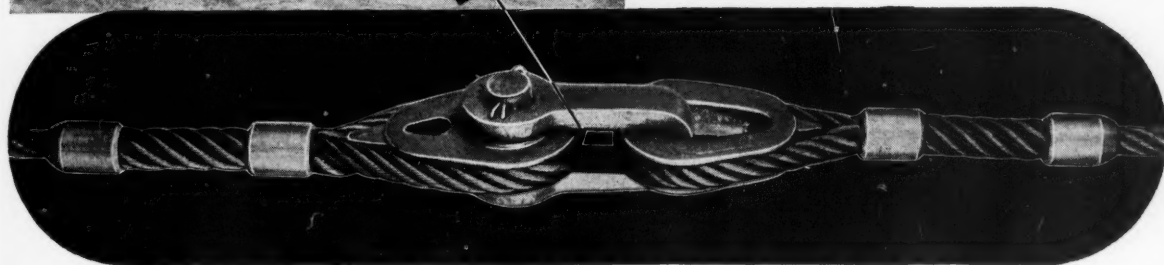
TRUSCON STEEL COMPANY

PRESSED STEEL DIVISION • 6100 TRUSCON AVENUE • CLEVELAND 4, OHIO
SUBSIDIARY OF REPUBLIC STEEL CORPORATION

Circle No. 26 on Reader Service Card for more information



DUALOC BOOM CABLES



ONLY the New DUALOC gives you these

4 IMPORTANT ADVANTAGES -

1 PREVENTS FATIGUE FAILURES. Complete flexibility with Double Hinging action. No place for hidden and unexpected failures to happen from vibration.

2 COMPLETE, ACCURATE INSPECTABILITY. No wrappings, tapings or solderings. Completely open for inspection at any time. You can always know the exact condition of your Boom Cables.

3 COMPLETE ADAPTABILITY. Endings have same dimensions as zinc sockets—can be installed without alteration to present equipment.

4 NO LOWERING OF WIRE ROPE STRENGTH. Strength in all parts equal to full catalog strength of the wire rope. You have all the advantages of these assemblies with full assurance of all the strength built into your equipment by the manufacturer.

DUALOC Boom Cables are ACCO-Registered. This is assurance of highest quality workmanship combined with top quality material—Preformed Green Strand Improved Plow Steel Wire Rope.



MEMBER THE NATIONAL SAFETY COUNCIL



*Write for this folder
which gives more
detailed information*

ACCO

Wilkes-Barre, Pa., Chicago, Denver, Houston, Los Angeles, New York,
Philadelphia, Pittsburgh, San Francisco, Bridgeport, Conn.



AMERICAN CHAIN & CABLE
WIRE ROPE SLING DEPARTMENT

In Business for Your Safety

Circle No. 27 on Reader Service Card for more information

**DUALOC
BOOM CABLE
ASSEMBLIES**

Sa-a-ay!



—Aren't you making
a **BIG THING** out of this?

YOU BET WE ARE! Does 20% more power capacity at no extra cost sound big? Is 35% more work-life a big thing? Does a 20%-per-ton saving mean anything?

Why should we soft-pedal such advantages? Do you know what C&D *Slyver-Clad* Aircool Industrial Truck Batteries could do to your handling costs? Listen to this . . .

- If you average 200 tons per truck per day, C&D *Slyver-Clad* Batteries will boost that average to 240 tons per truck per day.

- If an ordinary battery "conks out" after 6¾ hours, C&D *Slyver-Clad* Batteries will give you 8 hours before recharging.

- If your handling costs run to ____¢ per ton, (you figure it), C&D *Slyver-Clad* Batteries will knock them down a cool 20%.

Now if you can laugh *that* off, you're interested in cutting profits—not costs. And we're afraid we just can't help you in that department.

**C & D
BATTERIES, INC.**
of Conshohocken, Pa.

TELEPHONE • DIESEL • INDUSTRIAL TRUCK
LOCOMOTIVE • STARTING & LIGHTING

SALES AND SERVICE IN PRINCIPAL CITIES

EST.
1906

Who's laughing? I want to know how C&D *Slyver-Clad* Aircool Batteries can help me cut my handling costs.

☐ Send Literature

☐ Send sales representative

NAME.....

COMPANY.....

ADDRESS.....

CITY..... ZONE..... STATE.....

Circle No. 28 on Reader Service Card for more information

Handling Idea of the Month



What's this! A straddle truck that straddles a highway trailer to load and unload. That's right, all you material handling men. Take a couple of minutes to examine this innovation because we believe it to be well worth knowing about.

It is necessary to construct a special loading ramp—in this case it consisted of 15" I-beam reinforced with 8" H-beams. The 56" wide opening between the I-beam runways is ample for a 54" wide flatbed trailer. (For your particular needs, it might be well to examine the average width of the trailers serving your plant.) As a safety measure, this company welded 1/4" steel plate to the full length of the I-beams. Steel "stop" plates were welded to the ends.

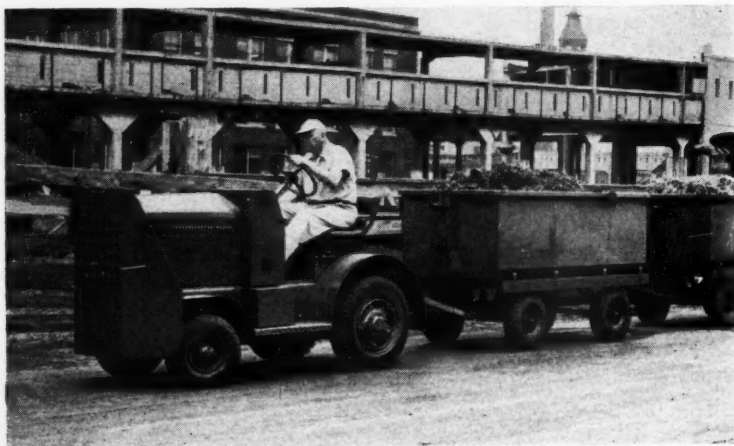
Look around your plant and see if such a loading or unloading method would not be mighty economical. Bar stock, tubing, pipe, rod, long lengths of flat stock and other material with similar shapes lend themselves to this type of handling. Trailers are loaded in a matter of minutes. And nary a finger need be lifted in the process.

Read the complete story about this and other unusual operations at Donovan, Inc., St. Paul, in the December issue of FLOW.



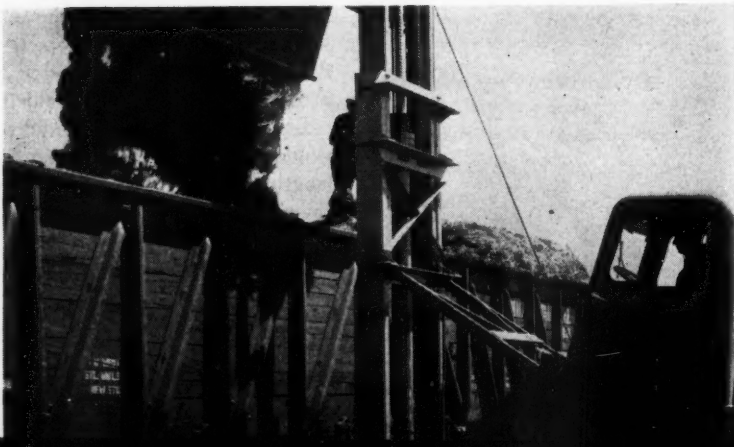
← **POWER SCOOP TRUCK** is used to clean out the manure from pens. Load is then dumped into trailers stationed near pen area. Clean-up job is done quicker and with less effort.

→ **TRACTOR** makes round of pen area and picks up trailer for movement to railroad siding for dumping. The tractor-trailer train method has helped reduce cost.



← **LIFT TRUCK** picks up body from trailer at dumping station. Demountable body on trailer has special pins to which lift truck attachment fits.

→ **SWIVEL ATTACHMENT** makes it easy to dump load direct into open car. In just a matter of minutes the pens are cleaned, the load delivered to railroad siding, and dumped into the car.



me
an
ca
W
a
alr
the
mo
of
ap
cle
ha
Tr
cha
the
ity
tru
ten
wit
tru
sco
ma
del
pro

FL

Scoop Truck—and—Trailer System

Ups Production Efficiency 25%

If you have a foundry, a bulk handling plant—or make almost anything—there may be a lot of ideas in this story for you. Take a look and see . . .

There is a lot of money to be saved by applying mechanical handling methods in a stock yard. Ask anyone at Union Stock Yard and Transit Co., Chicago, and they will tell you. The over-all savings? Well, about 25 per cent and in some individual cases a lot more.

Cleaning is the big job in any stock yard, and in almost any plant. The stock yards in Chicago are the world's largest; so the job is really a big one there.

In January of this year Union started on a complete modernization program. A thorough study was made of all work that had to be done. Then it tried to apply mechanical handling methods to each job of cleaning and feeding cattle.

Here's what it did to extend mechanical handling methods to cleaning and feeding operations.

Truck and Trailer Handling

After some months of study and testing, a mechanical handling system was developed. Here is the equipment used: scoop trucks of $\frac{1}{2}$ cu. yd. capacity, box-type trailers, industrial tractors, fork lift trucks and powered sweepers. The modernized system for cleaning proved so effective, as compared with manual cleaning, that a total of eight scoop trucks were purchased within a few months. The scoop trucks are useful in a variety of occasional maintenance tasks. They transport cinders, sand, debris, and aid in maintenance and construction projects.

Manure

The trailers were especially designed for the manure-hauling work. Of $2\frac{1}{2}$ cu. yd. capacity, they have demountable bodies and roll on pneumatic tires. The motorized sweepers are of two kinds: (1.) the riding and pick-up type for the cattle and hog alleys and, (2.) the hand-guided type which are used inside the pens.

The empty trailers are brought to location and dropped off by a tractor. The loading, aided by a sweeper, is done by one of the scoop trucks. Usually six trailers will be used in an operation: two at the loading point; two in transit; and two being unloaded at the rail spur. Manual cleaning is entirely eliminated.

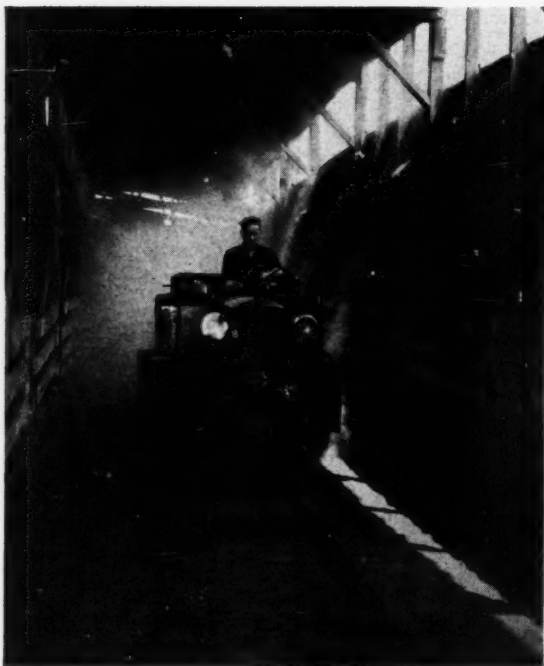
The fork truck uses a special attachment for handling the trunnion type trailer bodies. Each body or bucket has two trunnions on each end. The truck attachment has a corresponding dual hook arrangement. The lower one is rigid. The upper one, spring releasing, is controlled by a cable from the truck cab. The hook attachment is so designed that the trailer body is slightly overbalanced when resting on it. The release of the top hook trips the bucket, discharging the load into the gondola car. On a busy day up to four rail cars of manure are loaded by this method. A few tractors provide a stream of loaded trailers to the loading spur. No manhours are used



PALLETIZED HAY is received via trailer truck. The lift truck picks up the load, transports it to the yard area for speedy delivery.



POWER TRUCK takes over the pallet load of hay from the lift truck and quickly moves it to the pen area for feeding the cattle.



PEN AREA is cleaned with this power cleaner. It moves through the area on a routine schedule because cleanliness is important.



YARD AREA is cleaned thoroughly, too. This power sweeper tours all outside areas every day. Cleanliness increased efficiency.

for shoveling or forking, once the headache of this operation.

Feeding

Feeding is the other big job to which power handling has been extended. Part of the equipment used is a specially designed three-wheel truck trailer, which will turn into any alley.

One of the big jobs is to get the stock fed early each day so that there will be no interference with selling and weighing. For feeding the hogs, there are two grain elevators from which the corn is conveyed to two centrally located storage hoppers. From here the distribution to the corn boxes, located in the hog pens, is made by portable grain elevator. This is a hopper type machine drawn by a jeep with a power take-off; the grain is thus blown through a pipe into the corn boxes.

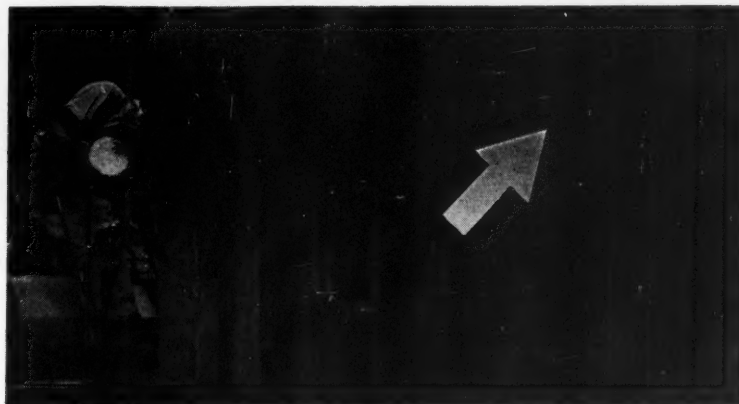
Baled hay, the other large-volume feed, arrives in rail cars and highway trailers. It is palletized for efficient handling. Some suppliers delivering by truck are given empty pallets in order to make unitized deliveries. Approximately 54 bales, about two tons, are loaded on one of the 72" x 96" hardwood pallets. Thus between 50 and 60 bales are taken off the delivering trailers at one time; and are unloaded in little more than 10 minutes. The single pallet loads are transported to location on the three-wheel trailer mentioned earlier.

While pallet handling of baled hay is still under test, Union is also experimenting with the possibility of using the pallets as feeding platforms. These are set up on the corners of two or more adjoining pens. Power handling of these loads has meant easier and quicker feeding of the cattle. Bales do not have to be lugged, and miles of walking on the part of personnel and horses is avoided.

Better handling adds up like this: production efficiency up better than 25 per cent; for some jobs the figure is even more.

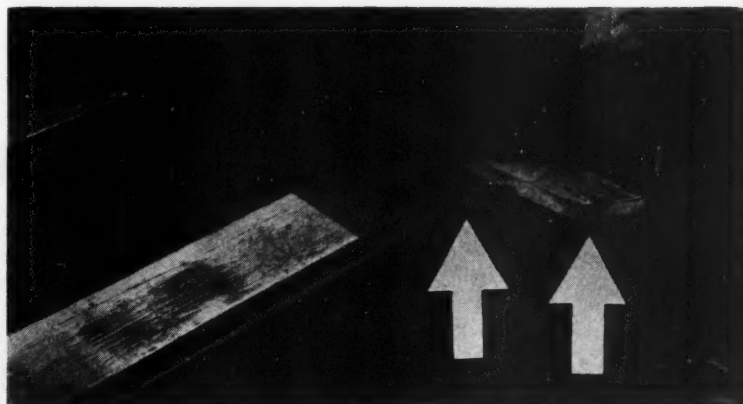
DON'T DO THIS

FLOW introduces a new column on bad handling practices for this issue. Five dollars will be paid for those that we use. No company names will be used. Send yours now to the Editor, Flow, 1240 Ontario Street, Cleveland.



Push or Pull Pallets

Pallets are not designed to withstand pushing or pulling. These things will happen with careless or poorly trained truck drivers in receiving, in-plant, and shipping handling. Why not call this to the attention of your handlers. Remember that excessive repair costs will result from such a bad practice.



Savings Can Disappear Overnight

An automobile manufacture worked up this improved pallet design with strapping to hold the load intact. It added up to quite a saving in handling cost for them, too. But poor loading and handling methods can make the saving disappear overnight. Excessive repairs of containers can add up to a lot.



SCRAP RUBBER IS LOADED into a fifth-wheel truck by one of Firestone's half-yard tire-mounted cranes. The 40-ft. boom is handy for quick spotting in piling and breaking-down piles, reaching gondola cars.

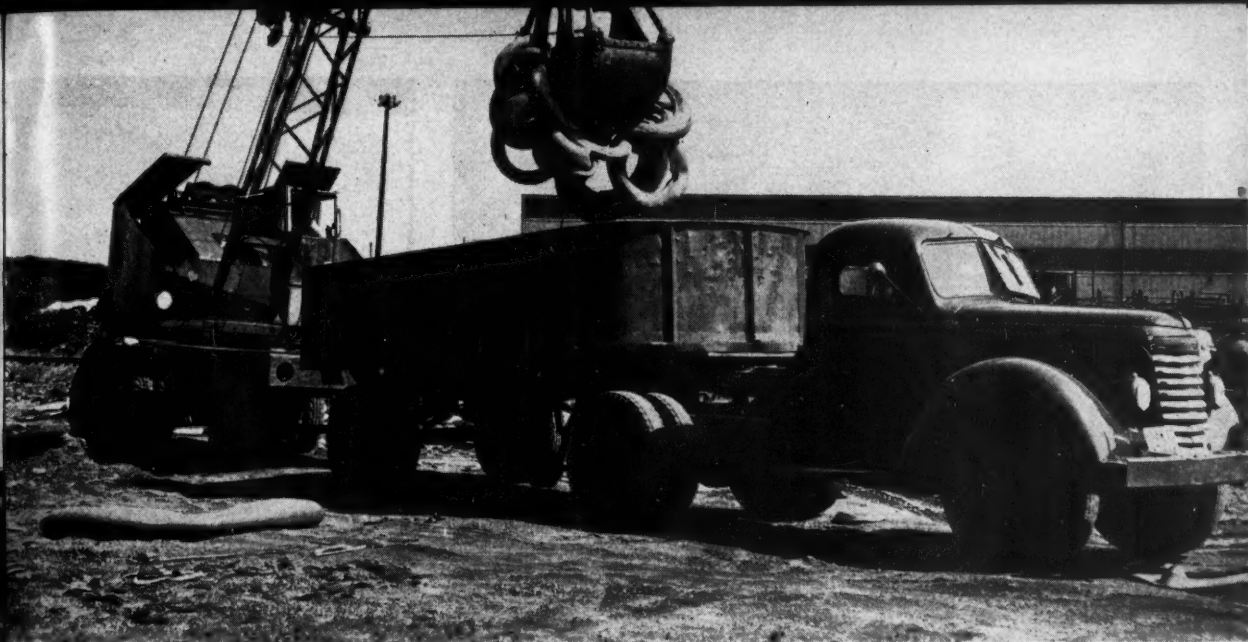
Mobile Yard Cranes



FORK TRUCK'S PUSHER attachment speeds the unloading of baled scrap rubber from an incoming box car. As the truck backs out of the boxcar it lands on the scale platform, where its weight is checked.



END-TYPE SKIDS carry baled scrap and rubber parings on their trip from the scrap yard to Firestone's reclaiming plant. A typical skid load consists of four bales weighing approximately 5000-6000 lb.



CLAMSHELL GRABS 3000 LB. of scrap at a bite, transfers it to gondolas. One tooth from each bucket jaw was removed to make bigger bites possible. The weight of the clamshell is valuable for breaking frozen piles in the winter.

Double Work Volume

Two half-yard tire-mounted cranes lug a whopping half-million pounds of scrap rubber every day around the 55-acre yard of the Firestone Tire & Rubber Company, Akron.

The company buys scrap rubber, stockpiles it for about a year, then delivers it to its reclaiming plant a quarter of a mile from the yard. The cranes do the receiving and stockpiling, and take on maintenance and other jobs when they're needed.

Cranes are equipped with clamshell buckets to quickly grab irregularly shaped loads. The cranes pick up about 3000 lbs. at a bite. Firestone engineers lopped off one tooth from each jaw of the buckets to make grabbing easier.

Cranes have independent boom action, important because they are often on the move as booms swing into position. The 40-foot booms are a big help in the precise spotting needed for building and breaking down stockpiles. The long booms allow cranes to stand still when moving scrap between two points, too.

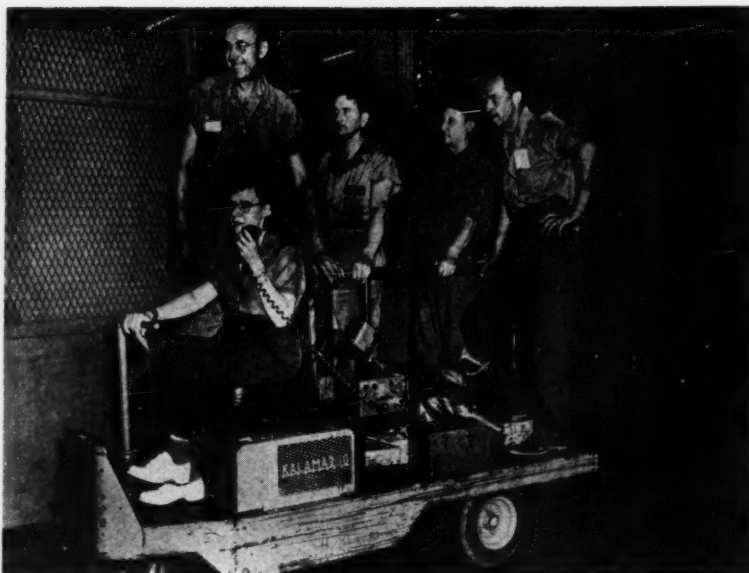
Cranes Have Doubled Work Volume

These tire-mounted cranes have been used for a little less than three years now. Operating records show that they handle twice the volume of work of the old equipment. Their travelling speeds make mincemeat of yard distances that used to cause expensive time wastes: they often cover 15 miles in a working day.

The different types of scrap Firestone buys are reclassified during sorting operations. Specific gravity, color and workability are checked over before stockpiling, since reclaiming is based on structure and composition of the different rubbers.

Scrap arrives mainly in box cars; but some highway trucks are used. Whenever possible, carriers are unloaded adjacent to the area where stockpiles are to be built. Rail spurs are located throughout the yard so that moves from incoming carriers to stockpiles are kept to a minimum. Scrap tires are rolled from

(Continued on page 82)



TWO-WAY RADIO pays for itself in six months with good control plan, preventive maintenance, and fast service. Maintenance men and equipment are being moved via truck to repair zone.

CONTROL PLAN provides instant operation figures. Form is posted daily by department from work.

2-Way Radio Triples

**W. V. H. Moore, Foreman of Materials Handling
TAPCO Plant of Thompson Products, Inc.,
Cleveland**

CONCLUSION

Two-way radio-telephone system enables the centralized material handling department at TAPCO to give speedy, two-minute service on most calls.

Figures are proof that the two-way radio plan is paying off. Here they are: before radio, the average number of service calls per eight-hour shift was 35. Today we handle about 190 calls during the same period. It was impossible before for us to give departments better service than they could obtain themselves by finding an empty truck and getting an operator to do the job.

During the time that we tried to get along with a flasher system the departments had to wait a half hour for service. Now, during a busy period, it is not unusual for the central dispatcher to receive as many as 21 calls in 14 minutes. We operate three shifts;

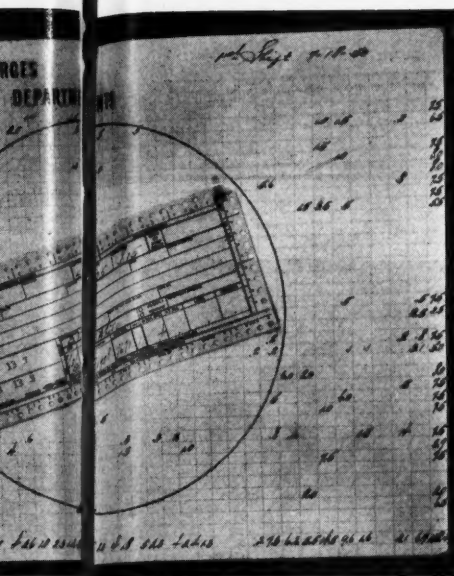
the number of calls drops off during the second and third shifts.

How the Radio Plan Works

The main station operator has a head phone and microphone. All calls for service are noted on a call sheet. Requests come to the main station over three lines belonging to plant's telephone system. The operator makes these entries on the "call sheet": (1) time; (2) type of job; (3) time job given to truck driver; (4) time call back that job is done. The call sheet gives a running account of the daily operation.

Records for the System

The time shown on the "trailer card", or the worker's time ticket, is entered on the *Record of Materials Handling Charges*. The time is charged direct to the department requesting the work. All trucks and departments are listed on this form by number. Truck time is entered under each department number, with the daily total shown in the right hand column. One



and equipment. Time charges are posted from worker's time ticket (circle).

[illegible]

Truck Load Hours

sheet is made out for each shift, and each sheet is totalled.

All "info" is entered on a master sheet. This is a permanent record used for budgeting. Each department has a budget for trucking time. And the control is by standard-productive labor-hours. Excessive charges show up at once on the *Record of Materials Handling Charges*. When an excess shows, the plant engineering department goes to work to make an analysis for corrective action.

The time posted on the *Record of Materials Handling Charges* is entered into the *Equipment Performance and Maintenance Record*. These forms are maintained in a book in which every piece of equipment has its own page.

Work-Time Recorder

The work time recorder on all trucks records the actual running time of each unit in the fleet. The data obtained from these recorders was used to set up a preventive maintenance program. "Info" from these engine hour meters showed the variance in running time of the trucks. This gave us the facts about the efficiency of the industrial trucks. Often, operating time would vary as much as 20 to 50 per cent. Actual running hours are used for maintenance.

Preventive Maintenance

Three Important Points

We have found that a good preventive maintenance program is a must to keep pace with the Two-Way Radio System. Proving the import of the three major elements of the complete program: (1) centralized materials handling for efficient equipment use; (2) the Two-Way Radio system to provide fast service to production; and (3) the engine hour recorders, the watchdogs of the maintenance program.

A well planned control system; two-way radio communication; and a top-notch maintenance program made it possible to payoff the cost of the communication system in about six months. We did it; maybe you can too.

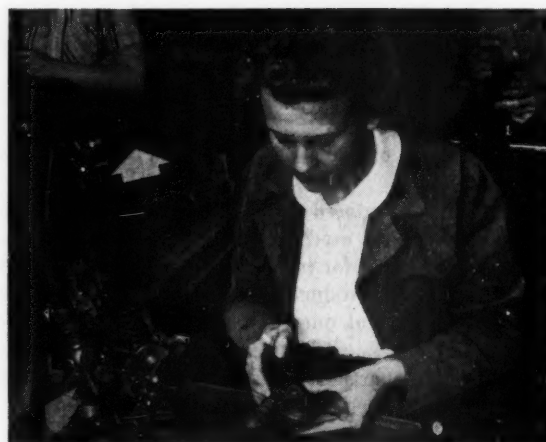
cost cutting BRIEFS

HAND HANDLING can be reduced and the job made easy if first thought is given to the handling job. That's just what production men found out at Sangamo Electric, Springfield, Illinois. This simple, but practical, steel slide conveyor directs the flow of work between these four workers.

The Answer: tie in your handling job to production; make the work flow; and complete the assembly right at the machine. It has paid off in dollars and cents for Sangamo.



FINGERS ON BELT CONVEYOR (arrows) guide parts from work place to work place at Chevrolet, Bay City, Michigan. Workers, as they complete their part of the carburetor assembly, place the part ahead of the finger and the conveyor takes it direct to the next worker. Work benches are arranged to minimize the hand handling job.



POWER VACUUM SWEEPERS are used at Wagner Electric, St. Louis, for cleaning factory and yard areas. In-plant aisles are cleaned daily; heavy traffic areas on the outside are cleaned twice each day; and other yard areas are cleaned daily or every other day. Power brush sweepers are used, too. They remove heavy accumulations of oil, dirt and grease. "A clean plant is an efficient plant" is the unwritten slogan at Wagner.



FO
(an
cag
are
for
to p
tire
and
driv
ly t

CO
mac
hou
pan
tak
corn
bag
or i
use

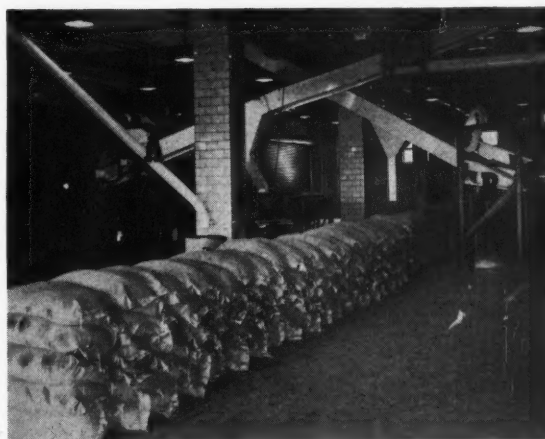
PLA
wat
Pro
The
as t
don
Her
ered
hois

FLOW

FORK TRUCKS and chain drive trailer line (arrow) serve the Johnson and Johnson Chicago Shipping center. Cartons of baby powder are placed in active stock from reserve by this fork truck. Pallets are placed on steel runners to prevent floor damage. Special non-marking tires are used on the truck to protect floors and maintain cleanliness. Trailers via chain drive run by the active stock area continuously to make up the daily shipping orders.



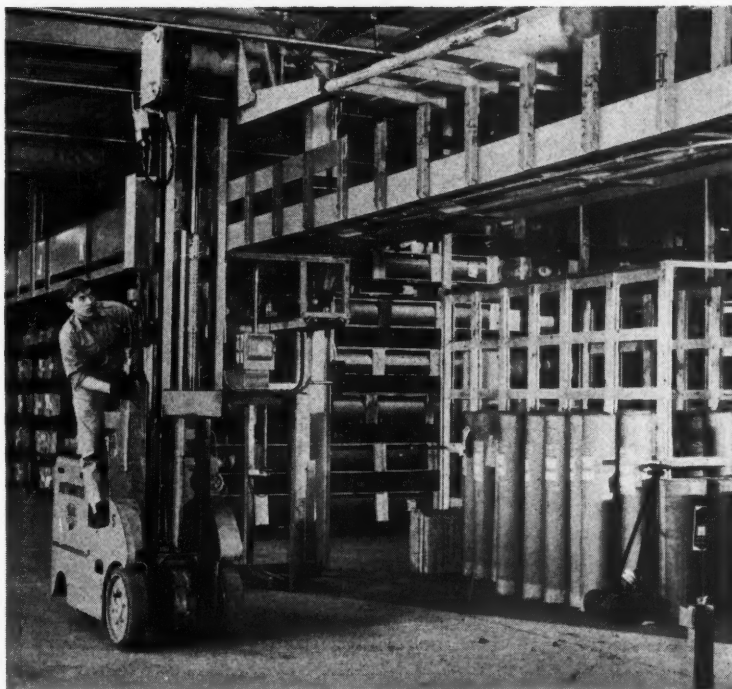
CONVEYORS AND CAR LOADERS have made a tough job easy in the new feed packing house of A. E. Staley Manufacturing Company, Decatur, Illinois. A car loader (A) takes the bagged feed into the farthest corners of freight cars. Feed coming off the bag conveyor line (B) is held for warehousing or is shipped out by truck. A bulk loader is used, too. It fills box cars by blower.



PLATFORMS ON CASTERS keep the hot water tank assembly line rolling at White Products Company, Middleville, Michigan. The castered trucks are moved step by step as the tank is assembled. The crating job is done as the heater moves along the line, too. Here, the outside cover for the tank is lowered into position by an overhead power hoist from the floor above.



SLAT CONVEYOR carries linoleum rolls from receiving to storage section. Fork truck, with finger, picks roll off conveyor and moves it to storage section. Conveyor and fork truck work as a "team" to lower costs.



FORK TRUCK with finger attachment moves linoleum rolls "to" and "from" storage area. Here the truck moves through narrow aisle to place roll on one of seven storage racks.



is straight with very little backtracking.

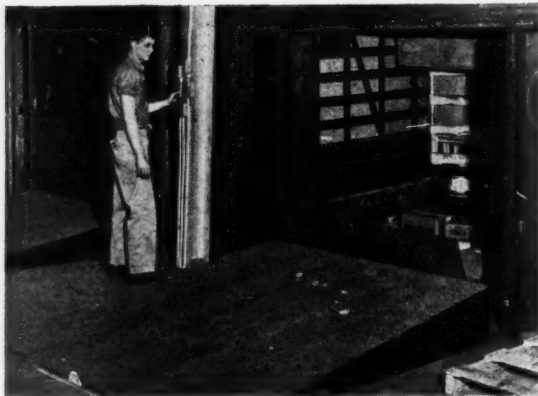
Receiving

The receiving truck platform has 16 loading docks, each with a hydraulic ramp that is adjustable to truck bed height by a hand button control. Smooth handling out of the trucks is obtained. The goods are usually loaded on wooden deck trailers for delivery to marking-inspection. Here the furniture and other

"bulk" items are palletized and then stacked three high. Pallet sizes range up to 48" x 96" to accommodate the largest davenports. Clear storage height is 12' 10", 18" below sprinkler heads.

Storage

The first layer of furniture is frequently stored on castered platforms on the floor. A mobile method which permits storage and later removal from the



HYDRAULIC DOCK LIFTS have push button control for adjusting height to incoming trailer truck beds. Goods can be unloaded quicker and damage is minimized. There are 16 docks for unloading.

stacks independent of the busy power lift trucks.

Stock shelves for bedding have rollers attached on one side. Box springs and mattresses stand on edge in these bins. The rollers enable one man to roll out units of these bulky goods without dragging or lifting. The rollers also aid in loading of the bins. The stock is simply "rolled" into place.

Such goods as furniture and appliances sometimes require finishing and repair work. The work areas for painting, finishing and final assembly are located so that they are in the direct line of flow between receiving-storage-delivery. The breakdown of the over-all space by zones simplifies handling.

Conveyors and Finger Trucks

A "wrap and pack" conveyor is used for glass, china, lamps and similar fragile merchandise. Packing stations are set up on each side of the belt which delivers to a chute that ends near the delivery platform. Thus the containers of fragile merchandise are delivered close to the location of the outbound vehicles—another example of *least handling*.

At the delivery platform, each truck space is equipped with a rack for the orders to be shipped. The various items of housewares are close at hand and securely stowed within the rack sections. Use of proper racking has cut loading time by 50 per cent.

The storage racks for linoleum handling are seven high, with each roll resting on arms having canvas sleeves as a load-supporting surface. The canvas strips prevent marring the rolls of uncrated linoleum. The fork trucks handling the rolls have a special finger attachment. With the finger attachment the round rolls are both loaded into and removed from the racks. This lift truck attachment comes with three or four fingers (or cross members attached to the vertical member), depending on the length of the rolls handled. The attachment can be flipped to either side in order to take linoleum from the storage rack at the left or right. The fingers or cross members are concave at one side, which serves as a retainer for the rolls during travel.

A slat type overhead conveyor moves the linoleum from the receiving dock to the storage area. The overhead conveyor reduces on-the-floor travel and is loaded and unloaded by fork trucks operating with the finger attachment. The conveyor line is reversible so the rolls can be routed in either direction between truck receiving and storage.

Other equipment for handling linoleum rolls are casters trucks with a rack arrangement. Arms are welded to vertical members having canvas sleeves for carrying surfaces. These casters units protect the linoleum, and are time and effort savers.

The broadloom is stored in a widely used type of trolley rack suspended from overhead tracks. The heavy rolls are loaded into the racks by the versatile fork trucks.

The Results

The results add up like this: the old 10-story warehouse was located only two miles from the company's downtown retail store; the new one-level building is 11 miles distant. The cost of the longer haul is more than offset by the economies that result from the flow improvements in the new building. Today, typical orders reach the downtown store more quickly than they used to from the old plant. In other words, our efficiency is such that eleven miles are closer than two miles used to be. This means that *waiting time*, the hidden cost factor, has been reduced to an absolute minimum.

Consider this statement by Carson's President:

President Bruce MacLeish says . . .

"Around our new layout are conveyors and fork trucks that move the tonnage and bulkiness of 1001 household items . . . safely, and without the hidden cost of *waiting time*."



Extra help on toughest Mass Handling jobs.

Extra man-hours saved. Extra fast moving, loading, stacking, transporting. Extra profit for you!



It will cost you nothing extra to learn how "Towmotor *Mass Handling* makes every materials handling job easier, faster, safer. For complete information, write for your copy of "Handling Materials Illustrated." Towmotor Corporation, Division 8, 1226 E. 152nd St., Cleveland 10, Ohio. Representatives in all Principal Cities in U. S. and Canada.



**FORK LIFT TRUCKS
and TRACTORS**



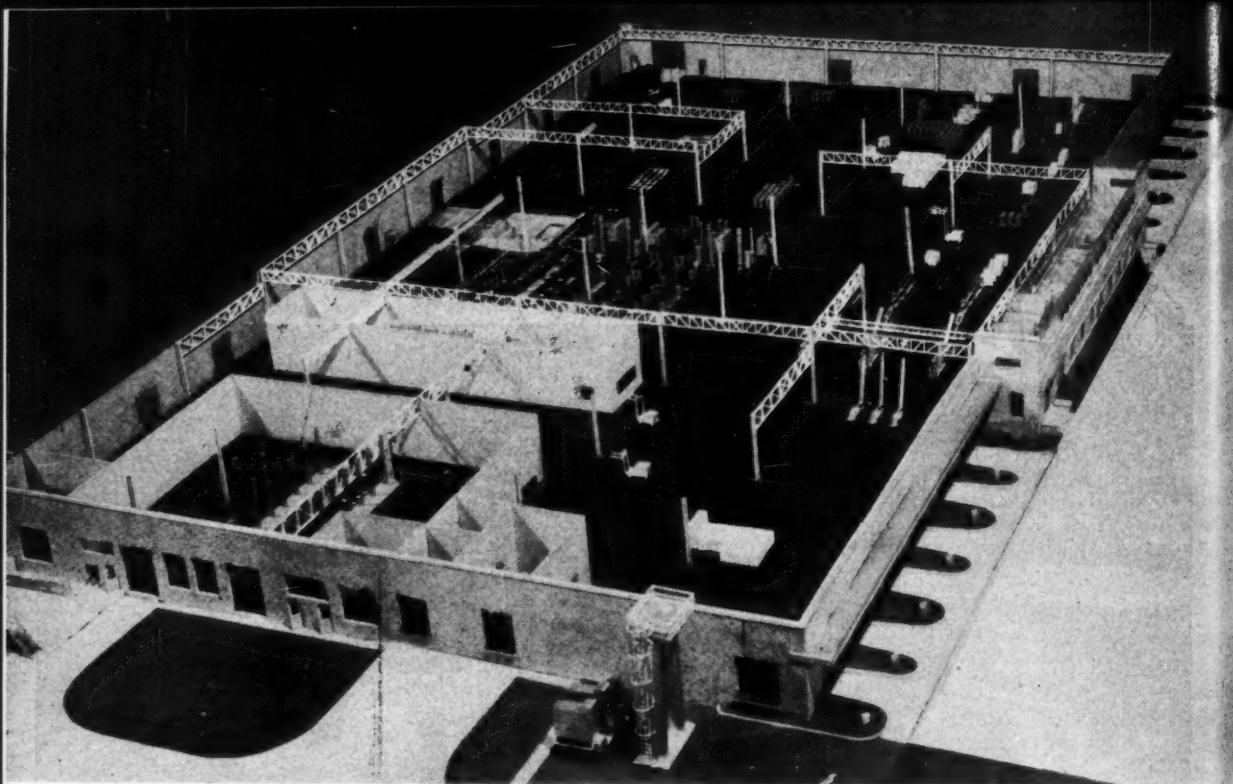
Arrange now for a private showing of this 30-minute sound movie on Materials Handling. See how Towmotor effects startling reductions in production costs. Ask for complete details at no obligation.

RECEIVING • PROCESSING • STORAGE • DISTRIBUTION

Circle No. 29 on Reader Service Card for more information

FLOW • NOVEMBER, 1950

43



MODEL LAYOUT was a big help in planning layout and handling system for new plant. All handling and production equipment in "toy size," one-quarter inch to the foot, made it easy to see how the plan would work.

Economical Handling of Drums

Planning of the layout and handling system for the new Phillips Petroleum compounding and packaging plant was done before the ground was broken. The plant, or shell, wasn't even thought about until the layout and handling system was decided upon.

Engineers and production men used a three-dimensional model for this careful planning job. All handling and production equipment was modeled in miniature like a toy. They tried, and succeeded, in eliminating many operations and mechanizing all others that they could. **THE RESULTS:** increased production, lower cost, and easier work.

The Old Way

Big, heavy fifty gallon drums filled with lube oils and greases were handled mostly by hand. There was

no planned movement of work. It was a costly way to do the job, required high worker effort, and production was low. This couldn't be the rule in the new plant.

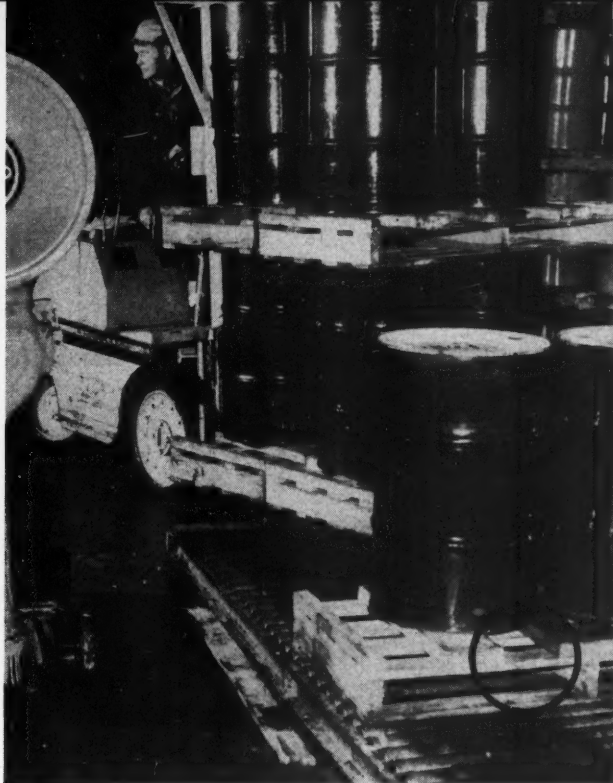
The New Way

These were the rules given by management to engineers planning the new plant production must be increased; use the best material handling equipment; worker effort should be reduced; and above all we must lower overall production costs.

Planning began from the ground up: location of the plant on the refinery grounds; the layout, the handling system; placement of filling, sealing and packaging machines. They didn't even think of the building style or type until the handling and production plan had been worked out. Only then, did the



DRUMS ON PALLETS are ready here for pick-up by fork truck. Gravity roller conveyors carry drums through this filling section.



EXPENDABLE pallet design (circle) enables fork truck to pick up a pallet or the drums. Pallet for storage; drums for shipment.

g drums —

Planned In Advance

engineers think of putting a shell around the plant. That was the way they started and it worked.

The Model Layout

Engineers and production men put the pieces of the plan together in a three-dimensional model layout. They worked to develop a straight-line, high-speed material handling system. Step-by-step, detail-by-detail, the plan was worked out to compound and package the lube oils in the most efficient way.

Conveyor belts carry the big drums in many directions. Some drums are being steam-cleaned; and still others are being inspected for defects. But all drums end up on the final filling line; where they are filled with oil by automatic machines that cut off just at the right moment when the drum is filled. Drums are palletized as they come off the line on "take it" or

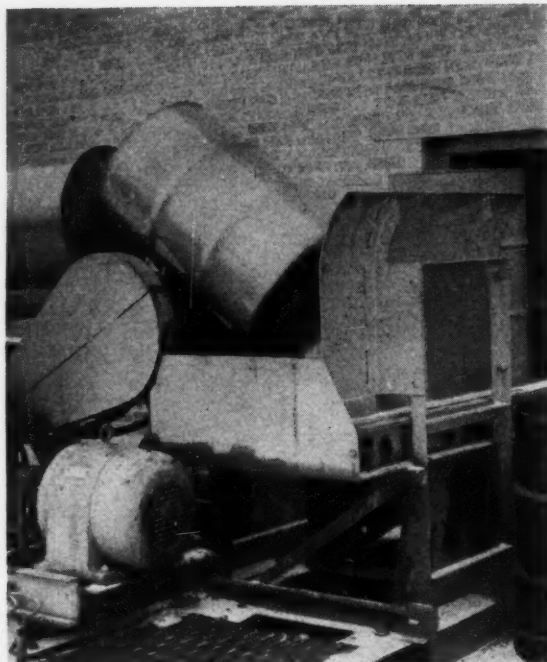
"leave it" pallets.

The Results Speak

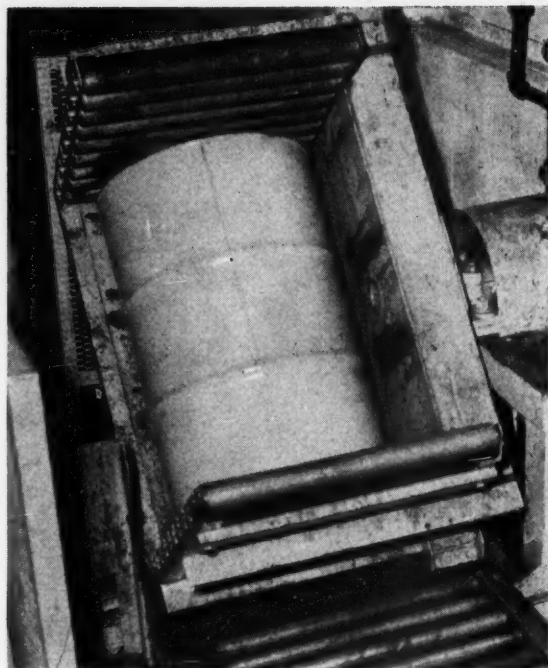
The dividends of this careful materials handling planning job were evident the moment the production plan began to work. **MINIMIZED** . . . handling by the workers. **MECHANIZED** . . . almost every handling operation; dock lifts, chutes, powered roller conveyors, fork trucks, tippers to turn the drums over. **ELIMINATED** . . . just about all of the handling operation done by hand.

RESULTS: costs are down and going lower, worker effort reduced, and production is on the upgrade day-by-day. Here's a picture tour of the new plant showing some of the best handling methods used.

**Turn the page for a photo tour
of the Phillips Plant**



TIPPER turns drums on end as they feed from yard storage via power conveyor. Powered rollers carry drum to plant for cleaning, filling.



TURNOVER here readies drum for filling. Up to this point the fill hole of the drum has been down to allow for drainage after cleaning.



CURVED ROLLER SWITCH directs drums from box cars (right) truck docks (left). Switch is easily changed by placing on "pegs" (circle).



MINIMIZE AISLE SPACE was the byword. Here, pallets stored at head of filling department are directed by worker to filling section.



THESE 4000-LB. CAPACITY CONTAINERS are designed with 3" underclearances for handling by power trucks with split platforms.



CONTAINERS ARE STACKED in neat load patterns with fork truck. Storage capacity was upped.

Storage Bin Makes Good Handling Unit

A container that started out as a storage bin ended up as the main cog in an improved handling system—and saved the cost of a new building!

Storage space for the abrasive granules that Minnesota Mining makes got too cramped for comfort recently. So company engineers went into a huddle to see what could be done—and came up with a clever new container that has become the focal point of the entire handling system.

Main reason for the storage headache: the plant handles about 800 different kinds of abrasives that have to be stored in separate batches from 2,000 to 12,000 lb. Equipment for handling these small batches had been manually propelled hopper-bottom buggies of 1600 lb. capacity. The bins were filled through holes at the upper level, emptied through holes on the floor below.

After the primary crushing operation on the ground floor, the material must be carried to the top of the six-story building. There it is crushed, screened, heat-treated and mixed. These operations advance the

material to the ground floor. Floor-to-floor movement is an essential part of the process flow. Each step in the cycle involves a haul of several hundred feet on one floor level, with one trip on a 6000 lb. capacity elevator.

The new metal container, welded of 12 and 14 gauge sheet stock, is 40" x 50" x 42". It has a capacity of 4,000 lbs. An especially clever feature: a closure device that controls flow of the granules from the box. This gadget is a semi-spherical rubber valve attached to the bottom of a steel rod. Using the rod, the valve can be lifted to discharge any quantity. Drop the rod and you seal the opening.

An underclearance of 3" was built into the container for pallet-type handling. Hand-guided power trucks equipped with split platforms are used to move the loads. Riding type trucks would be too much for

(Turn to page 78)

HANDLING AND PACKAGING

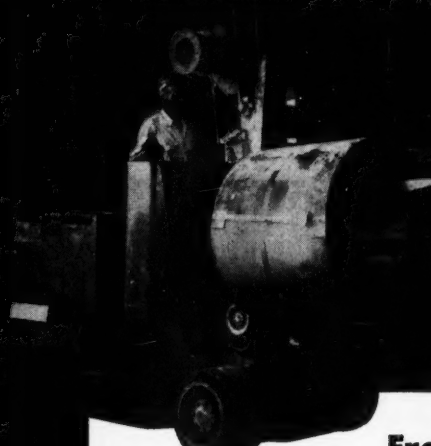
1

DATA SHEET

CONTAINERS

FLOW introduces this month a series of data sheets for your notebook. This check sheet series will run for the next few months on containers, pallets, receiving, shipping, in-plant handling and many more. More data sheets will be given on other handling and packaging problems to help you on your job.

QUESTION	ANSWER	REMARKS
1. What is the container strength?		
2. What is the loaded weight of container?		
3. What is the container size?		
4. The quantity per container?		
5. What are the number of shipments per week?		
6. What is the production schedule for these parts?		
7. How are parts packed in the container?		
8. What is the condition of the container when received?		
9. If they are damaged, what is at fault?		
10. What are your suggestions to eliminate damage?		
11. Can the container be improved or design changed?		
12. Is there any wasted space in container? Describe.		
13. Are the pieces improperly packed?		
14. Can the containers be used over with present method?		



New MAYTAG Automatic Washer Plant Uses 14 *BAKER TRUCKS*

From receiving of raw materials to shipping of finished washers BAKER FORK TRUCKS play a vital role in keeping costs to a minimum

The new Maytag Automatic Washer plant at Newton, Iowa, is one of the most modern of its kind. Architectural, production and material handling engineers have planned together to give it the most efficient system possible for movement of material. The 14 Baker Fork Trucks are an important factor in achieving this efficiency.

For Example:

Handling coils of steel strip weighing from 7,000 to 10,000 pounds each as shown in the top illustration with a Baker Heavy Duty Fork Truck has made it practical for Maytag to realize the economies of buying steel in full-width coils, slitting them to required widths in their own plant.

Machined parts are received or taken from

machine shop and stored in special parts bins—designed for easy access and visibility, and for safe high tiering due to built-in skids for handling with fork trucks. (See left, below.)

Diecast metal is received in bundles of pigs, bound with steel strap in a manner to permit unloading and tiering with Baker 4,000 pound fork trucks without the use of skid platforms or pallets. (Center below.)

One operator with a Baker (light-weight, low-cost) Fork Truck loads cars with 80 to 100 finished machines in the time it would take four men with hand trucks to do the job. (See right, below.)

These are only four of the countless cost-saving services performed by Baker Trucks for Maytag. Our material handling engineers are available for planning comparable savings in your plant.



BAKER INDUSTRIAL TRUCK DIVISION of The Baker-Raulang Company

1219 WEST 80th STREET, CLEVELAND 2, OHIO

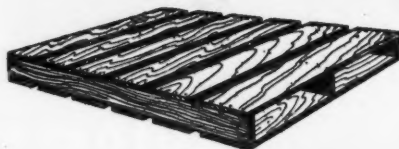
In Canada: Railway and Power Engineering Corp., Ltd.

Baker INDUSTRIAL TRUCKS

LOW LIFT HY-LIFT FORK & RAM CRANE TRACTOR PLATFORM

Circle No. 30 on Reader Service Card for more information

ON THE



PALLET

NEWS . VIEWS . TRENDS

A NEW TYPE OF CONVEYOR on which loads move automatically to dead center and stay there has been invented by a U. S. Steel Corporation engineer. The conveyor is a pathway of steel rollers, actually. On each axle are twin rolls, tapered slightly from the center out, but tilted so their working surfaces form a straight line. Net effect is a "toe-in" force toward the center of the conveyor. The idea has been put to work in several U.S. Steel plants already.

A NOVEL ELEVATOR SYSTEM for feeding scrap iron and other "charge" materials into the new open hearth furnaces of the Armco Steel Corp., Middletown, Ohio will be built by the Westinghouse Electric Corp. It will speed up the charging operation some 57 percent, it is said. The installation consists of four special hydraulic-type elevators which will serve three furnaces at Armco's new open hearth plant. The elevators are designed to reduce the time needed to charge a furnace from 3½ hours to 1½ hours. Each elevator will be fitted with a 10- by 20-ft. platform which will carry the "charge buggies" with their loads of scrap and other materials from yard level up 20 ft. to the charging doors of the furnace. The elevators will be designed to lift a 45,000-lb. load in 30 seconds, with a maximum rating of 60,000 lb. in 38 seconds. They will be loaded at right angles to the furnace, and will revolve 90 degrees to permit the charge buggies to be unloaded in line with the furnace doors. The buggies will run on tracks installed on the elevator platforms.

BY REDESIGNING DRUM HOOKS and spreader bar for moving oil drums, a cagey Army Transportation Corps officer upped the hook's lifting capacity from six to twelve drums at a time. The new hooks use just half the chain needed before. Another improvement: the double capacity spreader bar makes the unhooking of drums after movement almost automatic.

A BRITISH SUBSIDIARY to the Caterpillar Tractor Company was formed recently. The new company will handle the procuring, inspecting, storing and shipping of British-made "Caterpillar" parts to dealers in the United Kingdom.

INDUSTRIAL SAFETY EQUIPMENT ASSOCIATION ELECTIONS. . . . Charles H. Gallaway, sales manager of the safety products division, American Optical Co., Southbridge, Mass., was elected president of the Industrial Safety Equipment Association at its annual meeting held the last part of June at White Sulphur Springs, Va. He succeeds Lawrence E. Dickson, president of the Standard Safety Equipment Co., Chicago, who has completed two years in office. E. L. Wheeler, Wheeler Protective Apparel, Inc., Chicago, was elected vice-president to succeed Gallaway. Stewart N. Clarkson, 420 Lexington Avenue, New York City, was reappointed secretary-treasurer.

A TILTABLE CONVEYOR SECTION in the assembly line in an Ohio Westinghouse plant is saving backaches. It allows spot welder operators to weld the bottom pan in a refrigerator cabinet without stooping or lifting the cabinet. A foot valve controls the air cylinder.

PORT OF BOSTON FACILITIES got a workout recently when more than 100 tons of heavy machinery (fourteen units of a coal-handling system going to India) were loaded on the SS Excelsior. The system will serve two steam generating units having a capacity of 25 tons of coal per hour.

MEN IN THE NEWS

... at Yale & Towne



J. P. Kinney

FIVE senior executive appointments in the manufacturing and sales management of the Philadelphia Division of The Yale & Towne Manufacturing Company were announced recently by Elmer F. Twyman, Vice President in Charge of the Philadelphia Division. These appointments are part of a major reorganization of the management of the Philadelphia Division begun June 15th by Mr. Twyman as part of a program to "produce and distribute a record volume of Yale hoists, trucks, and dial scales . . . for industry and the armed services."

The new senior executives, all reporting directly to Twyman, are: James P. Kinney, former partner in Gordon & Kinney, Inc., of Detroit,



J. A. Shellenberger



C. E. Moore

appointed General Sales Manager, to succeed Samuel W. Gibb, who recently resigned; James A. Shellenberger, formerly assistant to the Vice President—Marketing, General Foods Corporation,



B. A. Moski



J. T. McCarley

given the job of Director of Advertising, Publicity and Market Research; John T. McCarley, with Yale & Towne (Turn to page 80)



"Discover how wonderfully small trifling expenses mount up to large sums."

—Ben Franklin's Almanac, 1757

A single per cent saved here and another per cent saved there strengthens thy working capital for the coming year.

—Acme Steel Notebook, 1950*

Improved efficiency . . . greater thrift! For better than 70 years, Acme Steel methods and Acme Steel products have been helping American business obtain the benefits of these tried-and-true business virtues.

Almost every American industry is represented among Acme Steel's more than 50,000 customers, particularly in departments and operations concerned with packaging, shipping and materials handling.

For information on Acme Steel products, write on your business letterhead for free booklets on the specific products in which you are interested.

ACME STEEL COMPANY

Dept. F-110, 2838 Archer Avenue, Chicago 8, Illinois
There are 46 Acme Steel service offices in the U.S. and Canada.

*The sagest maxims of Ben Franklin, together with modern parallels, appear in Acme Steel Notebook, 1950. We have a free copy for you. Just ask for it.



Stitch metal like paper! Acme-Morrison Metal Stitchers securely fasten metal-to-metal and metal-to-other materials, like the rubber-aluminum combination shown here.



Acme-Champion Bag Stitchers are widely used throughout the food industry.



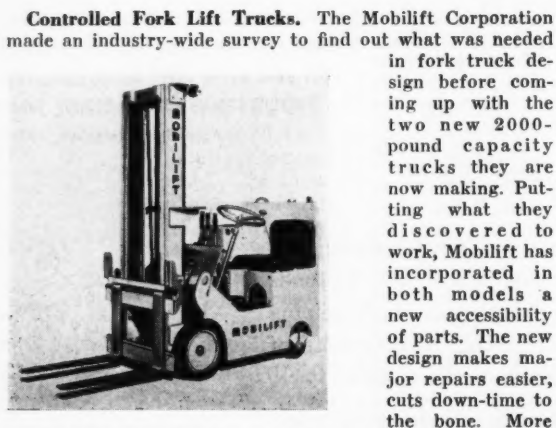
Of the 3808 Acme Steel employees 337 or 8.8% have worked with Acme for more than 25 years each and are members of our Quarter Century Club. Their total service represents 9305 years—tribute to "A Good Place to Work."

ACME STEELSTRAP flat steel strapping and ACME UNIT-LOAD carload bracing BAND, SEALS and TOOLS • ACME SILVERSTITCHER machines • ACME SILVERSTITCH stitching wire • ACME-MORRISON METAL STITCHERS and BOOK STITCHERS • ACME-CHAMPION BAG STITCHERS • ACME HOT AND COLD ROLLED STRIP STEEL • ACME GALVA-BOND steel slot stock for Venetian blinds • ACME STEEL SPECIALTIES, including hoops, corrugated fasteners, nail-on strapping and other container reinforcements • ACME STEEL ACCESSORIES—snips, cutters, punches, tool mounts, reel stands, coil holders, coil trays.

Circle No. 31 on Reader Service Card

NEW PRODUCTS

For additional information on these products, write Dept. 5, Flow Magazine, 1240 Ontario St., Cleveland 13, or use the postcard bound into this issue.



Controlled Fork Lift Trucks. The Mobilift Corporation made an industry-wide survey to find out what was needed in fork truck design before coming up with the two new 2000-pound capacity trucks they are now making. Putting what they discovered to work, Mobilift has incorporated in both models a new accessibility of parts. The new design makes major repairs easier, cuts down-time to the bone. More

power is another feature of the new trucks: a 3-cylinder heavy-duty engine is the power plant for both of them. Lev-R-Matic controls eliminate all gear shifting. Truck in the photo is the Model "ER".

Circle No. 32 on Reader Service Card for more information



Wheeled End Dumps. New end dumps equipped with wheels have been put on the market by Palmer-Shile Company. The units may be handled by platform or fork truck, and the wheels give convenience of movement in crowded plant areas and narrow aisles. Two wheels are stationary, two are swivel casters. Dumping is simplified by a rocker geared to a track. A safety latch

locks during loading. The dumps are built of heavy steel plate reinforced with angles and channels, and are of all-welded construction.

Circle No. 33 on Reader Service Card for more information

All-Purpose Metal Framing. Unistrut Products Company makes an all-purpose metal framing which they say is en-

tirely adjustable and reusable. This photo shows the framing being used for storage racking. It is put up with two tools: a hacksaw and a wrench. Basically, Unistrut is a metal channel with a continuous slot with inturned edges along one side of its length. Into this slot goes a spring-backed nut with serrated grooves which bite into the inturned edges of the channel. Spring keeps nut in place while fitting and bolts are assembled.

Circle No. 34 on Reader Service Card for more information

Coupled Roller Conveyor. Metalok is what Steel Parts Manufacturing Company calls its new roller conveyor with

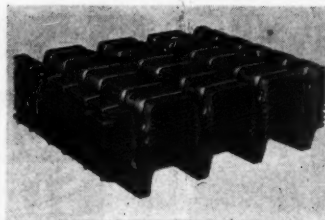


coupling and lock. Speed and ease in attaching lengths and locking them in place is the big advantage of their coupling-and-lock design, Steel Parts says. Another advantage: the reversible and interchangeable feature which

makes it necessary to turn only the curve in order to change the directional flow of the conveyed material.

Circle No. 35 on Reader Service Card for more information

All-Steel Pallet. The Nesteel all-steel pallet that Powell Pressed Steel Company is making carries more than 10 tons

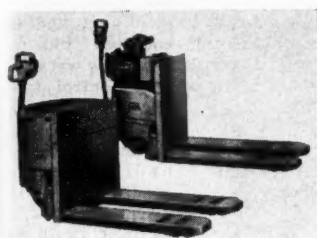


without any trouble though it is extremely lightweight. Designed so that it will nest with other Nesteels, this pallet helps save warehouse space. Powell calls it ideal for "ship-and-return" work. The Nesteel allows 4-way fork

lift entry, has adequate perforations for banding or tying load to pallet. Its nesting feature prevents slipping when crane handled.

Circle No. 36 on Reader Service Card for more information

Two New Hand Trucks. Hand trucks in two power types have been added to the Clark Equipment Company line.



The Electro-Lift is battery-powered with motor drive. The Hydro-Lift is gas engine-powered with hydraulic pump and motor drive. Both trucks use the same frame, tires, brakes and brake linkage, forks and rollers, slides, lift cylinders and linkage, main carrier bearing and handle (except the controller).

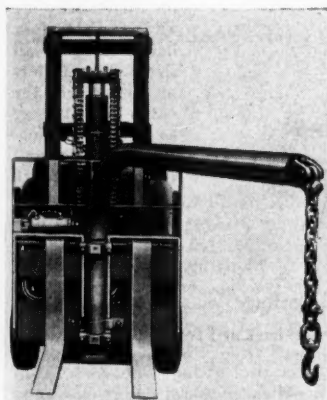
Clark claims they have the shortest turning radius, shortest wheelbase of any truck of their type. Another big selling point: easy-to-get-at engines and parts, to make maintenance work easy.

Circle No. 37 on Reader Service Card for more information

Shielded Gravity Conveyor. Aluminum shielding is used on the gravity conveyor recently announced by The Rapids-Standard Co., Inc., to make it particularly valuable where sanitary standards are important. The new conveyor features lightweight construction with aluminum channel frames and wide extruded aluminum cross-members. Three lanes of aluminum wheels are spaced on 3-inch centers. A 14-gauge aluminum shield is fastened to top flange of the frame. Ten-foot sections have a capacity of 500 pounds; five-foot sections have 700-pound capacity.

Circle No. 38 on Reader Service Card for more information

Slewing Crane Arm. Towmotor Corporation is marketing a new slewing crane arm that it says will permit rapid, easy positioning in freight cars of loads up to 800 pounds at 80 inches load center.



The crane arm is pivoted so that a two-way hydraulic cylinder can swing it laterally 20 degrees to either side of center. It is detachable: the truck can be used with standard pallet forks. This photo shows the crane arm and forks mounted together

on the carriage of a Model LT-44 Towmotor lift truck.

Circle No. 39 on Reader Service Card for more information

Electrifugal Pump. A redesigned close-coupled Electrifugal pump and motor (with internal and external design

changes to provide improved operating characteristics, greater ease in maintenance) has been announced by Allis-Chalmers Manufacturing Company. The improved unit has new sealed motor bearings; a unit-cast frame; double seal on front motor bearing which keeps liquid out of the bearing under normal operating conditions, and a large opening in the frame between the pump and motor to make packing maintenance easy. Its all cast iron construction resists corrosion. The pump is available with removable casing in some sizes, removable cover plate in others.

Circle No. 40 on Reader Service Card for more information

Heavyweight Straddle Carrier. A ruggedly built straddle carrier, designed particularly for steel mills and industries

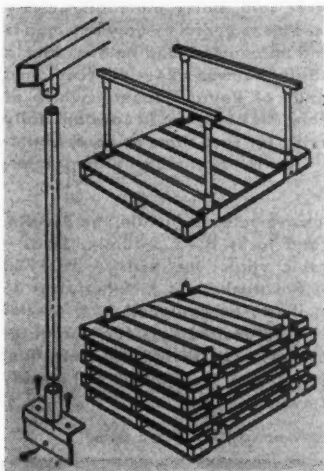


having similar service conditions, has been developed by the Ross Carrier Company. The new carrier handles 45,500 pound loads, travels up to 33 miles per hour. Called the Series 100, it carries reserve strength in every part, according to

Ross. The frame has heavily reinforced and braced formed steel wide box-section side members and tubular upright and cross members, all welded. Series 100 is powered by a heavy duty 6 cylinder 140 hp gas engine. Steering is 4 wheel hydraulic.

Circle No. 41 on Reader Service Card for more information

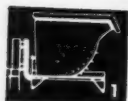
Flexible Stacking Pallets. Wood pallets can be quickly adapted for tying by using the Palteam parts made by the



Paltier Corporation. Palteam is a pair of tying horses which may be assembled to any standard 3-stringer wood pallet. Four one-piece socket assemblies are permanently secured near the corners of the pallet with three lag screws for each assembly. Posts slip fit into these sockets and two cross bars slip fit over the top of the posts; and you've changed ordinary pallets into stacking pallets. Three

strengths of posts are available for light, medium and heavy loads.

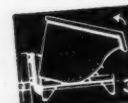
Circle No. 42 on Reader Service Card for more information



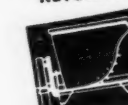
TRIP RELEASE



IT TIPS
DUMPS



RETURNS



LOCKS ITSELF



Only ROURA Has the Exclusive
Instant Release (Patent Pending) Handle

Handling wet or dry, hot or cold, bulky materials quickly and easily, the ROURA is simple to operate—only one man is required for distributing and unloading—and he does this in much less time than ordinarily required under old-fashioned manual methods. Thousands of Roura Hoppers (which fit any standard fork or platform lift truck) are in constant daily operation, serving and saving for such firms as Ford, Champion Porcelain, General Electric, National Carbon, International Harvester, etc.

By a simple lift of the exclusive release handle, the ROURA HOPPER dumps, rights, and locks itself securely. Sizes— $\frac{1}{2}$, $\frac{3}{4}$, 1, $1\frac{1}{2}$ and 2 cubic yards; the ROURA HOPPER can also be designed for flat trucks and in other sizes to meet specifications. Also, it can be equipped with special flanges that permit stacking to desired tiers for storage or future distribution of materials—conserving valuable floor space. Priced below all competition, the ROURA will quickly pay for itself many times over.

Write today for detailed brochure, "In Dollars & Sense."

ROURA IRON WORKS, Inc.

1411 Woodland Ave.

Detroit 11, Mich.

Circle No. 68 on Reader Service Card for more information
54

Motorized Sweeper. Wayne Manufacturing Company makes a motorized sweeper that steers like an auto, sweeps



like a city street-sweeper, and is equipped with a new type vacuum dust control system that Wayne says will assure dustless sweeping under extreme conditions. This machine cleans a 42 inch swath at 6 miles per hour: it is reported capable of sweeping 100,000 sq. ft. of open area per hour. A dust control system draws dust into an easily

emptied metal box. Its 16-inch steel disc wheels carry it smoothly over car tracks, curbs, gutters and up ramps. The pickup broom is a small edition of municipal models. On the basis of Wayne-run tests, this machine is claimed to be capable of replacing 20 men with push brooms.

Circle No. 43 on Reader Service Card for more information

Drum Truck. Made from cast magnesium alloy, the frame of the Drummaster drum handling truck weighs just 17 pounds. The



light weight of the new truck is what makes it easy to use, according to Mahaffy Iron Works Company Ltd., its makers. No need to touch the catch when engaging drums on this truck: it's adjustable for height to suit all sizes. Two rollers at the back of the catch make it easy to slide for disengaging. The unit is equipped with 10-inch diameter by two-and-a-half inch face moulded on rubber tired roller bearing

wheels with Alemite grease fittings.

Circle No. 44 on Reader Service Card for more information

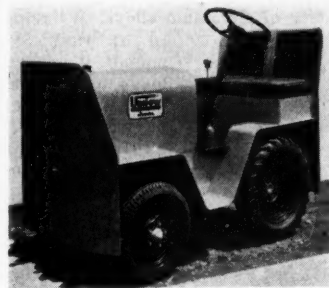
Improved Lift Truck. The Marforge Load-Mobile, made by Market Forge Company, has undergone several important changes since it was first put on the market. According to the manufacturer, these important improvements are being built into the current models: A high-low switch for easier maneuverability; spring-mounted casters for added stability (especially in narrow models); freer use of sealed

NOVEMBER, 1950 • FLOW

ball-bearings in the control system; rearrangement of the hydraulic lifting system to the front end, where it is less likely to be damaged going over rough floors.

Circle No. 45 on Reader Service Card for more information

Industrial Tractor. Hensel Green & Company is producing a new industrial tractor that they claim will answer the demand for a general-purpose tractor of small dimensions. The new tractor's 72 inch turning radius gives it an easy, agile maneuverability that makes it ideal for navigating narrow warehouse aisles, docks, railroad platforms and wherever loads must be handled in limited space.



Three speeds forward go from 3.3 mph to 10 mph. Called the Unitow, the tractor has a rated drawbar pull of 1800 pounds. Towing capacity: 36 tons L.C.L. on the level.

Circle No. 46 on Reader Service Card for more information

Unbreakable Buckets. A tough thermosetting blend of plastic and rubber goes into the unbreakable buckets that United States Rubber Company developed for carrying corrosive chemicals. Made in the 12-quart size, the new buckets resist aliphatic solvents, all alkalies, most acids and other corrosives up to temperatures of 150°. They are lighter and tougher than hard rubber varieties, won't crack or shatter.

Circle No. 47 on Reader Service Card for more information

Lightweight Hand Chain Hoist. Yale & Towne Manufacturing Company figures a man can lift 1,000 pounds using its new hand chain hoist with less effort than he would exert going up an average flight of stairs. Secret of the easy-working hoist is the use of aluminum alloy to get strength without weight. The ½-ton capacity model weighs just 37 pounds, will lift a full load three feet in 20 seconds. Called the "Load King", the hoist has carry-around lightness even in the two-ton capacity model, according to Yale & Towne. "Synchromatic" braking has been built into all Load Kings. Available in ½, 1, 1½ and 2 ton capacities.

Circle No. 48 on Reader Service Card for more information

Automatic Unloader. The Sahlin "Iron Hand" is a completely self-contained automatic unloader used to remove sheet metal stampings from mechanical and hydraulic

Handy-Handler



Conveyor

**SAVES TIME!
WORK! MONEY!**

Weights only 92 lbs. without power unit, approximately 150 lbs. with ¼-HP electric motor. Perfectly balanced for easy handling.



This lightweight, general-purpose conveyor is unequalled in versatility. It will save you hundreds of dollars in thousands of ways expediting handling, eliminating costly, time-consuming, hand operations.

In the shipping room, the warehouse, along the production line, the Handy-Handler hustles bulk materials to their destination. Capacities on stoker coal run to 24 tons per hour operating at a 35° angle with a belt speed of 450 fpm. Ashes, gravel, salt, ores, chemicals, mash and other bulk substances at comparable rates.

ENGINEERED FOR SERVICE

Constructed of 61ST6 aluminum alloy, the Handy-Handler is easy for one man to position and operate. It's portable in the real sense of the word; take it anywhere in the plant, quickly and easily.

Comes in lengths from 10 to 20 ft. Choice of rubber flights and continuous rubber belt or rubber flights and steel chain. Powered by either gasoline engine or electric motor. Negligible maintenance required.

Write for free illustrated literature on Model "S" Handy-Handler. A postcard will do!

Sixteen-ft. conveyor without power unit sells for \$218.00. With power unit, prices on 16-ft. models run from \$270.00 to \$288.00 depending on motor or engine selected. All prices F.O.B. Orient.

BELT THE BELT CORPORATION
7406 STAHL ROAD ORIENT, OHIO

Circle No. 69 on Reader Service Card for more information

Circle No. 70 on Reader Service Card for more information

MODELS CUT TIME, EFFORT AND COST



1. Makes layout "lifelike".
2. Easy to see how plan will work.
3. Aids in planning aisle space and flow lines.
4. Exact scale models help in "selling" plan to management, production workers.

Dollars invested in scale model layout will repay
you many times

ROYCRAFT MODELS, INC.

8 South Dearborn Street, Chicago 3, Illinois
Factory: De Pere, Wisconsin



*"On-time"
maintenance
prevents breakdowns...
keeps up efficiency*

HOBBS Engine Hour METERS

remove maintenance guesswork

Powered equipment in the repair shop represents a drain on efficiency. You can prevent much of it by knowing when to change oil, lubricate, inspect, overhaul, etc.

The HOBBS Meter tells you when. A precision-built electrical timing instrument, it tells at a glance accumulated engine operating hours. It's accurate and built for rough usage. Fully guaranteed . . . low in price. WRITE FOR FULL DETAILS.



ORIGINATED AND MANUFACTURED EXCLUSIVELY BY

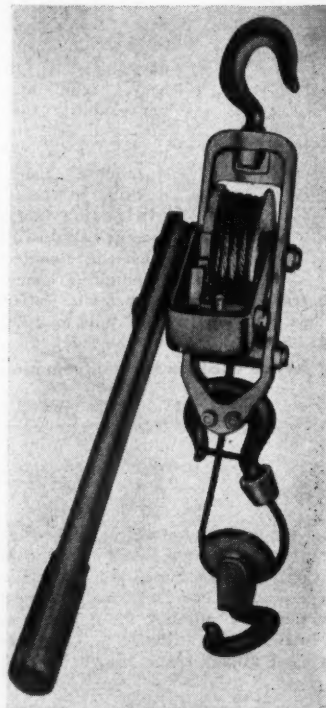
John W. Hobbs Corporation
2061 YALE BLVD. SPRINGFIELD, ILLINOIS

Circle No. 71 on Reader Service Card for more information

presses. Sahlin Engineering Company, manufacturer of the equipment, has recently built a longer stroke and a longer reach to the unloader, extending its application to handle a greater variety of stampings. A new cam assembly minimizes vibration and provides a rigid mounting. As an added safety feature, a limit switch is provided to stop the press midway in downstroke, if the jaws do not retract properly to rest position because of failure in the airline.

Circle No. 49 on Reader Service Card for more information

Featherweight Winch-Hoist. The Lug-All is a really lightweight winch-hoist made of aluminum alloys. Weighing



in at just 8½ pounds, it handles loads up to a ton-and-a-half. Pre-formed aircraft cable has been used instead of the usual chains to overcome kinking problems. Two features the manufacturer says are unique in winch-hoists: a built-in snatchblock, three swivel hooks to permit work around corners or in close quarters with as little as 10½ inches between hooks. Loads can be maneuvered with complete safety because of an interlocking pawl arrangement: the 20-inch reversible safety handle bends in case of overload before any part approaches its breaking point. The Lug-All Company makes the unit.

ing point. The Lug-All Company makes the unit.

Circle No. 50 on Reader Service Card for more information

"Dynatork" Drive on Clark's Yardlift-60. Clark Equipment Company's Yardlift-60 fork truck is being put out with Dynatork Drive now. Dynatork Drive is Clark's tag for a method of transmitting engine power to the drive axle by magnetic induction, across an air gap. This idea eliminates the clutch and replaces standard transmission with forward-and-reverse constant-mesh gearing. Clark figures on equipping all its trucks with Dynatork drive eventually.

Circle No. 51 on Reader Service Card for more information

Giant Fork Lift Truck. The Ross Carrier Company calls its Ross Series 24 fork lift truck "the world's largest fork lift truck on pneumatic tires." This mammoth truck takes on loads up to 26,000 pounds and 72 inches in width. Aimed at handling the heavy jobs found in tie yards, sawmills and metal-working plants, the Series 24 is powered by a heavy

duty 126 hp gas engine. Big pneumatic tires and plenty of weight on the driving wheels enable it to operate effectively in yards with a minimum of prepared surfacing. Hoisting, tilting and steering are hydraulic.

Circle No. 52 on Reader Service Card for more information

Roller Power Curve. Pomona Service & Supply Company calls its Chain-Roll power curve "the first practical device for conveying bags, boxes and other containers with a minimum of manual attention." The power curve has a minimum of working parts; heaviest loads are carried by steel roller-type conveyor chains which run on rollers on the edge of a curved steel track. Boxes can be carried crossways or lengthways with or without cleated bottoms. Chains are driven by sprockets to assure correct alignment of any package on the system so that it will leave the curve in the same position relative to the conveyor as it had on reaching the curve.

Circle No. 53 on Reader Service Card for more information

Fibre Waste Hamper. Designed specifically for use where space is important, the all-fibre hamper made by the William Bal Corporation has steel-reinforced top and bottom edges, and hand-holes for lifting. The hamper's shape and size were picked to make it useful in operations where waste accumulation is a problem.

Circle No. 54 on Reader Service Card for more information

CONVEYORS

for OLD and NEW BUILDINGS

Pictures and sectional drawings of over 500 types and designs of conveyor systems.



Get your copy of our new book!

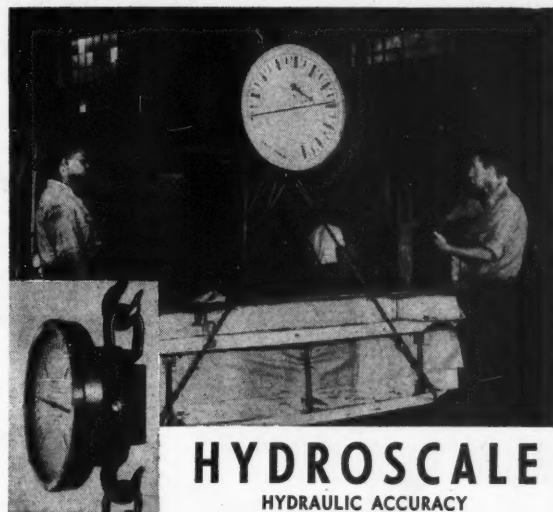
Name _____ position _____
 company _____ street _____
 city _____ state _____

ANCHOR STEEL & CONVEYOR CO.
 DESIGNERS & MANUFACTURERS
 6906 Kingsley Ave., Dearborn, Mich.



Circle No. 72 on Reader Service Card for more information
FLOW • NOVEMBER, 1950

Circle No. 73 on Reader Service Card for more information



RUGGED COMPACT CRANE SCALE
 WEIGHS THE LOAD AS YOU LIFT IT TO MOVE IT
 500 LBS. CAPACITY TO 100,000 LBS. CAPACITY

SAVES TIME AND SPACE

Eliminates need for weighing stations—eliminates equipment tie-ups and loss of man hours. In one plant where one was tried there are now 10.

Openings for scale sales representatives.
 Write for catalog.

HYDROWAY SCALES, INC.

20624 WEST 8 MILE ROAD P. O. Box 176 DETROIT 19, MICH.

SEMI-LIVE SKIDS

Typical Ironbound Money-Savers



★ Short-haul units for carrying loads up to 2,500 lbs. safely and easily. Made of new billet steel and selected hardwood. Bolted construction allows replacement of deck. A short haul system is comparatively inexpensive because a few lift jacks will service many skids.



● This semi-live unit has permanently attached box top. Can also be made with removable top or tiering type top if required.



● Semi-live skid with stake pockets and removable side racks. Available also with end racks, wood or pipe stakes or super structures to meet individual requirements.

Bulletin 7-SL illustrates these units

BOUND TO BE BETTER
Ironbound

IRONBOUND
 BOX & LUMBER COMPANY
 Materials Handling Division
 30 HOFFMAN PLACE • HILLSIDE, N. J.

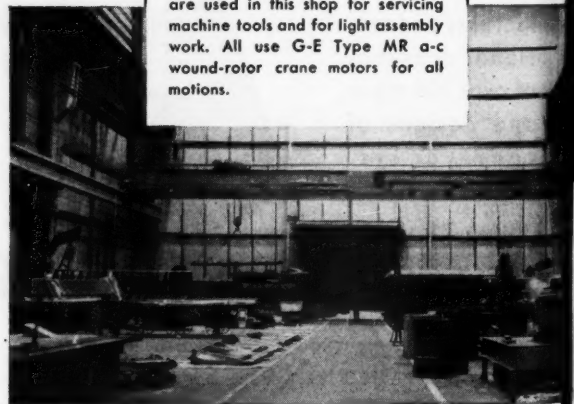
SKIDS • SEMI-LIVE SKIDS • DOLLIES • FLOOR TRUCKS
 Circle No. 74 on Reader Service Card for more information

Spotting loads— 150 tons or 50 lbs. a job for cranes...



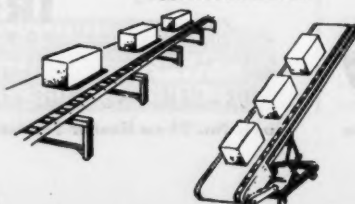
Moving and positioning gigantic pieces like this 150-ton welded frame is a familiar sight at this large factory. Two G-E equipped cranes—a 100-ton and a 200-ton—go into action as the crane follower signals to raise the load.

Worker easily controls this general purpose, pendant push-button operated, machine-shop crane. Several are used in this shop for servicing machine tools and for light assembly work. All use G-E Type MR a-c wound-rotor crane motors for all motions.

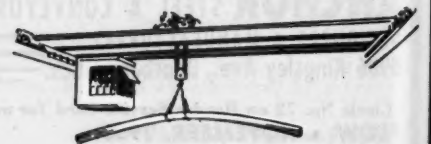


*Everything
electrical*
for
**MATERIALS
HANDLING**

CONVEYOR DRIVES



CRANE DRIVES



Design
100-
motor
offer

POWERED by G.E.

G-E crane-drive equipment gives safe, positive control for all operations from accurate spotting to high-speed lowering. By specifying General Electric equipment you gain the benefits of 40 years' experience in crane electrification. G-E engineers work closely with crane manufacturers in all stages from design to production engineering. See your local classified 'phone directory for a listing of the nearest G-E office. *Apparatus Department, General Electric Company, Schenectady 5, N. Y.*

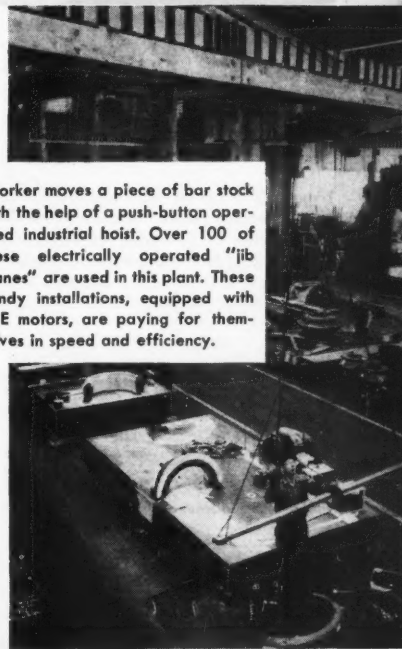
SEE the latest techniques and equipment in this new film



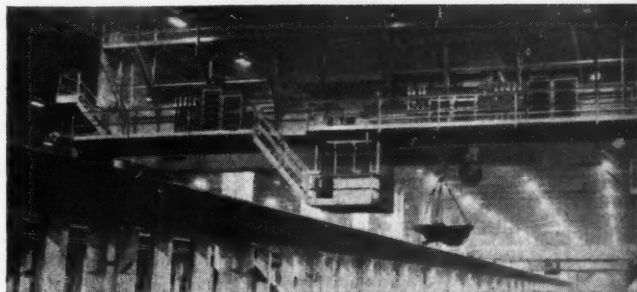
As a service to industry, General Electric has produced an unbiased, authoritative movie* covering in detail the latest techniques and equipment in materials handling. Your equipment supplier or G-E representative will make this film available to you and your staff—without cost or obligation.

*Part of G.E.'s MORE POWER TO AMERICA program; film is titled "Materials Handling—In Receiving, Warehousing and Shipping."

Worker moves a piece of bar stock with the help of a push-button operated industrial hoist. Over 100 of these electrically operated "jib cranes" are used in this plant. These handy installations, equipped with G-E motors, are paying for themselves in speed and efficiency.



Designed to lift large castings and fabricated sub-assemblies, this 100-ton outdoor gantry is driven by General Electric MD-600 crane motors. Known as the "toughest G-E crane motors ever built," they offer increased overload capacity and greater stability.

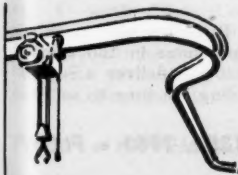


100-ton heavy-duty crane with main and auxiliary hooks shown lifting a small casting. The G-E magnetic hoist control on the bridge provides dynamic braking, automatic acceleration and deceleration and correct kick-off torque without cycling, overshooting, or downward drift.

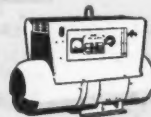
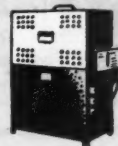
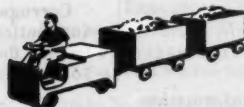
GENERAL  ELECTRIC

668-90

HOIST DRIVES



INDUSTRIAL TRUCK DRIVES & BATTERY CHARGERS



Circle No. 76 on Reader Service Card for more information

3 MODERN PLANTS

—YEARS OF ENGINEERING EXPERIENCE



and ready for
your conveying
problems

● Whatever the problem
—handling shells or shoes,
steel or brass, cartons or

bags—it's a job for Mathews Engineers. Three modern strategically located plants, staffed by engineering and production people with long, varied experience in mechanized handling, make available to the industries of the United States and Canada a conveyor service that is complete from proposal engineering to installation in the field. Write for new Mathews Catalogs today.



MATHEWS CONVEYERS

GENERAL OFFICES

Mathews Conveyor Company . . . Ellwood City, Pennsylvania

PACIFIC COAST DIVISION

Mathews Conveyor Company West Coast . San Carlos, California

CANADIAN DIVISION

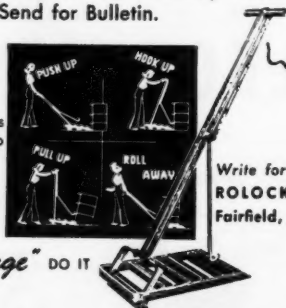
Mathews Conveyor Company, Ltd. . . . Port Hope, Ontario



"THERE'S NEVER A HUFF-PUFF
IN A TOTE LOAD"

It's smooth, no-strain loading and rolling with "George," the almost automatic TOTE BOX TRUCK. Easily operated by men and women, speeding movement, cutting costs. Truck hook engages tote box handle; truck handle leverage glides box onto upper truck rollers; secures load; lower rollers carry truck to destination. Some plants order by dozens. A money-saver in any quantity. Send for Bulletin.

*With apologies
to you-know-who



LET "George" DO IT

Write for free Folder L
ROLOCK Incorporated
Fairfield, Connecticut

Circle No. 77 on Reader Service Card for more information

Plastic Templet Layouts. A Magne-Plastic templet is sensitized plastic upon which an equipment drawing has been reproduced. Permanent magnets are inserted in the reproductions to make the templet. These templates are laid on a plastic mat which has an outline of your building drawn on it, and rearranged to fit your changing ideas on best plant layout. When you have them set up the way you want them, you make a print of the layout. Made by Magne-Plastic Corporation.

Circle No. 55 on Reader Service Card for more information

Torque Converter Locomotive. The Fate-Root-Heath Company has announced a new line of hydraulic torque converter locomotives. The manufacturer points out that the application of torque converters is not an experiment: it has been used in autos, cranes, power shovels, rail cars, logging machinery and a batch of other equipment requiring flexibility and smoothness in applying power. The advantages of hydraulic torque conversion: reduction of shocks and vibrations; varied reduction ratio, automatically adjustable to load conditions; stepped-up engine torque (multiplied five times at stall).

Circle No. 56 on Reader Service Card for more information

Portable Conveyor. An adjustable, portable conveyor unit designed for a wide range of handling applications in which working heights and areas change frequently has been developed by May-Fran Engineering, Inc. Designed to handle small stampings, castings and granular materials, the Little Hustler is particularly useful as an auxiliary unit with permanent conveyor systems. Working height is regulated by a double-screw center lift: pitch adjustments are made by a crank handle. Made of all-steel welded construction, the units are sold in 4, 6, 8, 10 and 12-foot lengths. Belts come in cleated white cotton or neoprene impregnated.

Circle No. 57 on Reader Service Card for more information

Bundling Chains. A complete line of bundling chains has been developed by the Round Associate Chain Companies, supplied in $\frac{1}{2}$ ", $\frac{3}{4}$ " and $\frac{7}{8}$ " sizes, and made up in any length. The close-link style chain may be bought in low or high carbon steel or alloy quality—depending upon size of load to be lifted and type of service. Ends are furnished with heavier size links, rings or pear-shaped links. Chains are suitable for any handling of bundled material. Most common applications: in steel mills (for bundling bar or sheet steel and pipe) and the handling of timber and boxed or packaged goods.

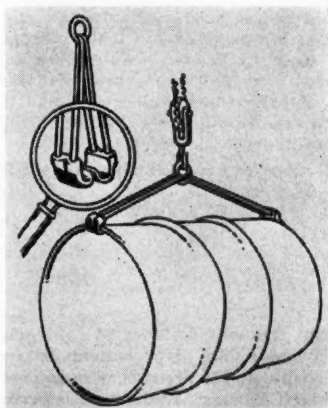
Circle No. 58 on Reader Service Card for more information

Corrugated Box Machine. The Rite-Size box machine automatically produces 600 boxes per hour in 120 square feet of floor space: in five minutes it will deliver a run of 50 box blanks of a given size, including the time to set the

machine and reset for the next size. According to Jacob Industries Sales Corporation, it requires no special skill to operate.

Circle No. 59 on Reader Service Card

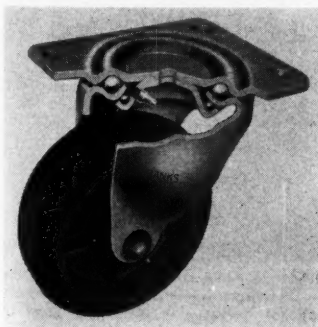
Drum Lifting Hook. The Morse Manufacturing Company recently redesigned its Model Number 41 drum



lifting hook, making it much lighter and at the same time stronger. This particular hook is made for lifting steel drums, although it may be used for barrels. Lifting capacity is 1,000 pounds.

Circle No. 60 on Reader Service Card

Swivel Caster. Completely eliminating the non-rigid, three-piece kingpin assembly, Fairbanks Company has



come up with a double ball race, pressed steel swivel caster in 4", 5" and 6" sizes. Their Lock-Weld construction embodies spot-welding to form a solid one-piece unit. Top plate holds the curved top of the fork in position, permanently locked between

Now! A DUAL-PNEUMATIC
4000-POUND AND 6000-POUND

MOTOWLIFT

with
**THESE FOUR
SUPERIORITIES**



POWER—plenty! With that dependable, rugged, 6-cylinder FORD Industrial Engine.



CLUTCH—Years in development! The Best from Borg-Warner.



DRIVE-AXLE—Heap on the punishment! Its special Timken-Detroit combination axle and constant-mesh transmission can take it!



CONTROLS—Single-lever. Pioneered by Service; refined to new performance levels.

Cost-Saving Service Materials Handling Products



Motowlift
Gas-Powered
Hydraulic Lift Truck



Service
Hand Lifter



Service
Liftable



Service Electric
Hydraulic
Lifter



Service
Hydraulic
Leverlift



Service
Leveler

SERVICE CASTER & TRUCK CORP.

Executive Offices: Albion, Michigan
Plants at Albion, Michigan and Somerville 43, Mass.

REPRESENTATIVES IN ALL PRINCIPAL CITIES
See Your Classified Telephone Directory for Nearest Distributor

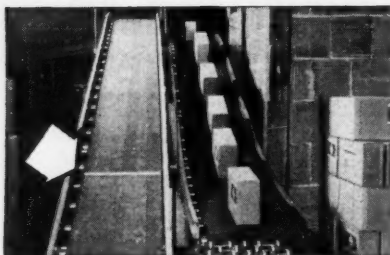
Circle No. 78 on Reader Service Card for more information

Circle No. 79 on Reader Service Card for more information

ALLIGATOR



CONVEYOR BELT LACING



Every
Tooth
A Vise*

**in Long Continuous Lengths
for Conveyor Belts**

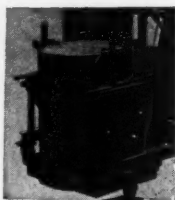
- ★ Excellent for Package Conveyors, Portable Loaders, Trenching and Ditching Machines, etc.
- ★ In canneries where corrosion or rust is a problem specify Alligator made of Monel.
- ★ For magnetic separators or anti-sparking specify Alligator made of Everdur.
- ★ Separable and smooth on both sides.
- ★ 12 sizes. For belts from 1/16" to 5/8" thick—and any width.

**Order from Your Supply House. Ask for Bulletin A-60.
FLEXIBLE STEEL LACING CO. 4702 Lexington St., Chicago 44, Ill.**

JUST A HAMMER TO APPLY IT

CESCO DUMPER HANDLES BAGS, DRUMS AND BULK

MULTI-PURPOSE DUMPERS for dumping bags, bulk or drums, as well as single-purpose types save handling time and reduce accidents. Dumping heights range from 5 to 12 ft. Special sizes made on order. Have lifting capacity of 500 lbs.; handle up to 100 loads per hr. 1/2 H.P. motor controlled by push button. Immediate delivery. Write for 8-page catalog.



**DEALERS
IN ALL
SECTIONS**

COLSON EQUIPMENT & SUPPLY CO.

1321 WILLOW STREET • LOS ANGELES 13, CALIFORNIA

Circle No. 80 on Reader Service Card for more information
62

the upper and lower rows of balls. The patented leg design was engineered to eliminate bending and buckling.

Circle No. 61 on Reader Service Card for more information

Fatigue Tester. A fatigue tester for the testing of loaded paperboard, fiberboard and wooden shipping cartons and boxes has been introduced by L. O. Koven & Brother, Inc. The testing machine has a vertically mounted, revolving drum, consisting of a hexagonal-shaped testing chamber supported by two flanged steel heads, mounted on an I-beam base. Body sections are made of 3-inch thick dressed fir. It comes in two sizes, to handle small-medium and medium-large containers. Test procedures are established that will indicate: the ability of a container to stand the beating it is expected to take in shipment; the protection a container will give its contents in shipment.

Circle No. 62 on Reader Service Card for more information

Automatic Gluer. A continuous type automatic feed gluing machine of unusually simple design has been developed by Potdevin Machine Company. Entire unit is permanently mounted on a portable stand. The operator controls the speed at which sheets are fed (or the control can be permanently set to feed the sheets at pre-determined intervals).

Circle No. 63 on Reader Service Card for more information

HAPMAN
TUBULAR, CHAIN OR CABLE
CONVEYORS

FOR FLOWABLE MATERIALS

SOLVED!
A DIFFICULT
CONVEYING
PROBLEM

Here, the problem was how to make completely automatic, the removal of dry cast iron chips from the base of 2 profile milling machines in the International Harvester truck engine plant at Indianapolis. Hapman Conveyors job-engineered the installation shown; it operates (1) in 2 planes and 2 directions, (2) without transfer points, (3) requires minimum clearances and (4) few structural supports.

These are but 4 of the 45 difficult conditions now being met successfully by Hapman job-engineered Conveyors. Send for the Hapman catalog showing them in detail and listing the many types of flowable materials handled.

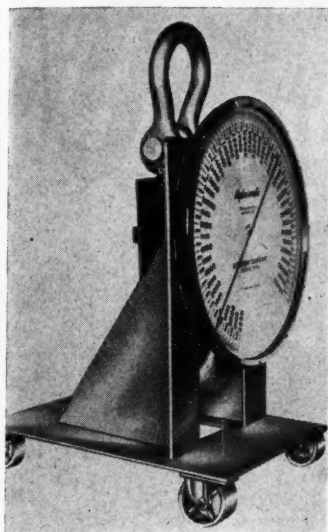
National Sales Offices in Thomas' and MacRae's

HAPMAN CONVEYORS Div. HAPMAN-DUTTON COMPANY
19209-E W. DAVISON • DETROIT 23, MICHIGAN

Circle No. 81 on Reader Service Card for more information
NOVEMBER, 1950 • FLOW

design
ation

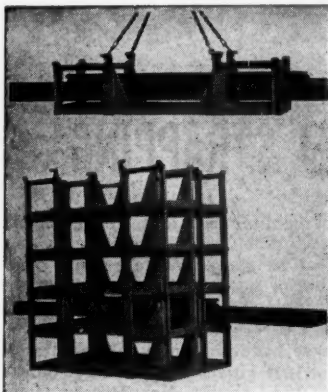
Crane Scale Stand. A heavy, welded plate steel stand equipped with casters has been developed by Hydroway



Scales, Inc., to avoid the damage that frequently occurs when scales are left laying on the floor. Two sizes are available: one for scales up to 1/4 ton capacity, one for scales up to 50 tons capacity. The scale is lowered by hoist into the stand and secured by a locking bar. The scale and stand can be rolled by truck or lifted by the scale eye for moving.

Circle No. 64 on Reader Service Card

Portable Bar Racks. New portable heavy duty bar racks, designed for more efficient handling and storage of



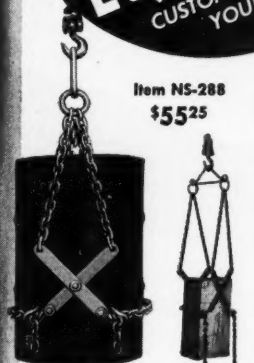
steel bundles by one-man operation, are announced by Palmer-Shile Company. Using this equipment, one operator can place bundles in racks for storage in tiers, any rack being easily accessible for selection of material de-

(Continued on page 86)

feed
level-
erma-
ntrols
can be
inter-
nation

Materials HANDLING EQUIPMENT

CUSTOM BUILT TO MEET YOUR NEEDS



Item NS-288
\$5525

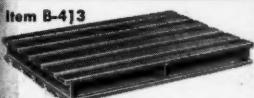
BARREL and BOX GRAB

For picking up any type of wood or steel barrel, box or container, from 40" diameter down to small nail keg size. Will lift up to 2000 lbs.



BARREL TRUCK

It Loads Automatically. Three style wheels metal, rubber or metal and pneumatic. Capacity 1000 lbs. 22" wide for narrow openings. Weight 85 lbs.



ALL METAL PALLET (Double face)

of special rolled steel for extra heavy duty—corrugated and reinforced with 3" channel supports. For power fork truck only.



NS-298
\$4650

HAND DUMP TRUCK

Reinforced heavy sheet steel. 1/2 cubic yard, capacity—two 8" semi-steel wheels and two 4" metal swivel casters. Wt. 125 lbs.

UNIVERSAL GRAB

Item J-631
(1000 lbs)
\$2890

Item J-632
(1 Ton)
\$3555



For picking up heavy boxes, crates, bales or other loads where hooks may be used. Heavy, forged steel hooks adjustable spread of from 16" to 48"

TRUCKS—SKID PLATFORMS—
PALLETS—RACKS—WORK TABLES
—BOX and BARREL GRABS—
CART—BOXES—STORAGE BINS

We design and build all types of materials handling equipment . . . for pick-up, loading, moving, dumping or storage . . . made of metal, or wood, or combination.

When Ordering Always give "item" number; this will help prevent error. All prices are f. o. b. Detroit. Prices subject to change without notice.

Write for catalogue

DESIGNED AND MANUFACTURED BY

Palmer-Shile Co.

16012 FULLERTON AVENUE
DETROIT 27, MICHIGAN

FLOW • NOVEMBER, 1950

DRUM and BARREL TILT

Item B-731
\$16500

A barrel tilt for controlled, precision dumping or pouring. Ideal for chemicals, solvents, powders, etc. Turns 360° through worm drive. Equipped with two safety type locking devices and all steel, welded yoke. Hand-operated chain drive.



Item S-519

PLATFORM BOXES and NESTING RINGS

Built in any size and capacity to fit your requirements.

UTILITIES RACK ON WHEELS

Item NS-415 M

(Roller bearing, 6" x 2", oil metal wheels).
\$6160

Item NS-415R

(Ball bearing, 8" x 1 1/2", rubber-tired wheels).
\$6380





PACKAGING TIME
CUT **50%**

PACKAGING COSTS
CUT **60%**

Read how
this manufacturer
makes big savings with **STANLEY STEEL STRAPPING**

You know that waste of time, labor and money packaging any product can cut deep into over-all profits. This typical case history shows just how big a saving the Stanley Steel Strapping System can make.

The Keystone Metal Moulding Company of East Detroit, Michigan, cut packaging time 50% by change from small cartons to large carton on a skid. New carton is closed, reinforced and bound to the skid with Stanley Steel Strapping. Packaging costs reduced a full 60%.

Figures like these from manufacturer after manufacturer who has switched to the Stanley Steel Strapping System tell a story you can't afford to ignore. Whatever your product — no matter how big or how small — check on the savings Stanley Steel Strapping can make in your Shipping Room.

Write for full details or have a Stanley representative call now. Offices in principal cities. The Stanley Works, Steel Strapping Division, 203 Lake St., New Britain, Conn.

STANLEY

Reg. U.S. Pat. Off.

STEEL STRAPPING AND CAR BANDING SYSTEMS

HARDWARE • TOOLS • ELECTRIC TOOLS • STEEL STRAPPING • STEEL

Circle No. 83 on Reader Service Card for more information

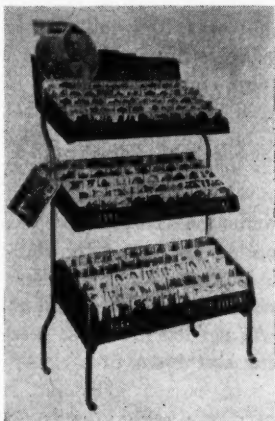
PACKAGING MECHANICS SECTION

A regular monthly section in which are presented solutions to the problems of efficient filling and handling of boxes, cartons, bags, bottles, cases, etc., used in commerce and industry.

CONTENTS



A LOT OF MANUFACTURERS who take great pride in the way they package their products pay little attention to the way packing materials are received and handled in their plants. If you can afford to take up to 80 per cent more time than necessary in handling your materials, don't bother to see page 66. (Incidentally, the cartons placed vertically at the sides of the stacks prevent load from shifting.)



TAKE A LOOK at this picture—looks just like a common display rack found in most stores, doesn't it? Well this one is quite a bit different because it also serves as a stock selection carrier and a shipping container as well. There are a lot of rehandlings eliminated. Customer good will zoomed. Take a look at a really clever development in packaging mechanics. It's on page 68.

cturer
ystem
prod-
n the
pping

tative
Works,
Conn.

OW

General Electric got these results by receiving their wirebound crates and cartons in small unit loads:

1. Handling time of wire bound crates reduced 80%.
2. Carton handling time reduced about 50%.
3. Handling from receiving-storage to packing down 30%.
4. Maximum use of rail car loading and unloading space.
5. More flexible and quicker handling.
6. Reduced inventory of cartons and crates on hand.

Receive Containers in Pallet Loads

**E. H. Ashley, Packaging Engineer
Schenectady Works, General Electric Company**

If you received 30,000 wirebound containers and about 3,000,000 fibreboard cartons a year as General Electric does that would be quite a lot. But even if you don't there are a few ideas about their system that you should be able to use.

In view of this large volume, they faced a multiple problem of handling and storing, how to maintain minimum inventory, and of operator handling at the packing stations.

In Two Separate Bundles

Before, wirebound containers were received in two separate bundles—two to six mats in one bundle; 20 to 50 ends in another. When these crates were located at packing stations, operators had to go to two piles to obtain the necessary parts for a container.

There were 14 sizes of containers. Some were so similar that operators had to measure ends to correspond to the selected mat. This was a big time loss.

Mats and ends arrived in bundles piled loose in box cars, about 40,000 to a car. These were placed on skids on the dock. A high-lift platform truck moved the loaded skids to highway vehicles; the loads were removed from the skids and placed on the bed of the carrier. At the shipping warehouse, they were once more loaded on skids and moved by high-lift truck to storage. Most bundles were hand-stacked, once-in-awhile an overhead crane was used for more height. As needed, bundles were moved one by one to packing stations.

Palletized Loads From Vendors

Through the use of fork trucks, we began ordering bundles strapped to expendable wooden pallets; 15 to



WIREBOUND CONTAINERS received in palletized unit loads have reduced costs and inventories. Pallets are made of scrap lumber and make them easier to handle in the plant.



FIBREBOARD CARTONS are received in pallet loads, too. Deck of pallets is made of corrugated paper. Runners consist of built-up pads, glued to the deck.

and Reduce Handling Costs

20 mats and ends in two bundles on separate pallets. These were removed from incoming carriers by the fork truck and spotted on the highway trucks. At the shipping warehouse, they were stacked two high (an average height of 12 ft.). As needed, they were fork trucked to packing stations. **RESULTS:** *Because of palletizing, handling time was slashed 80 per cent.*

Other studies proved that valuable time could be saved if mats and ends were packed together on the same pallet. Mats are now folded outside to outside at the middle corner joint. The two ends are placed between the folds of the mat. This has reduced the time necessary for packers to select container parts, since all are in one pile. The correct size ends are contained within the corresponding size of mat.

The pallet consists of two pieces of 2" x 4" or 3" x 4" scrap lumber which is used as runners. The deck consists of three pieces of 3/4" scrap lumber; the width is varied depending on the size of the mat.

Runners are nailed to the deck and the load is secured by two lengths of steel strapping. Runners have a capacity of better than 2,000 lbs. Nails are placed in the runners so that banding wire can cut into the wood enough to secure the load but not enough to split the runners.

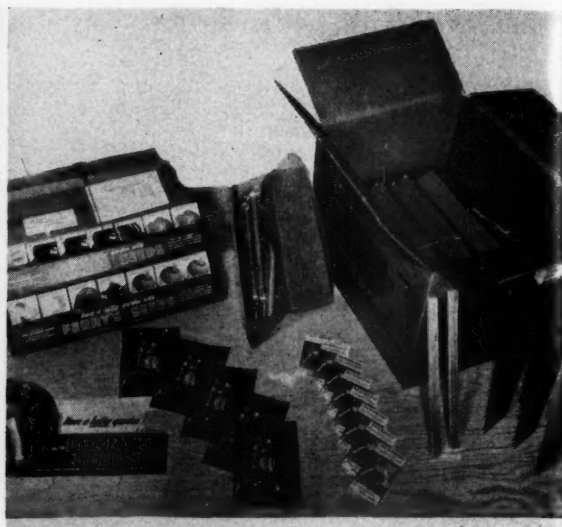
Smaller Load Units

Minimum inventory and easy to get at by operators at packing stations were always of prime importance. About 18 months ago the company said that load units should consist of only eight to ten mats totaling about four ft. in height. This was important from an inventory control standpoint. Because of the great number of sizes of mats needed at each station this was a space saver as well.

(Continued on page 70)



STOCK CONTAINERS are mounted on casted tables. They serve as shipping containers, retail display racks.



FIBREBOARD FILLERS played an important part in making this packaging plan a success.

Design Your Containers for Multiple Use

**George Smith, Superintendent
Ferry-Morse Seed Company, Detroit**

If you have been using your containers for just one job, maybe you've been letting them off too easy. The containers we use at Ferry-Morse to package our flower and vegetable seeds do three big jobs: (1) serve as work carriers in the plant; (2) carry the seeds to retail outlets; (3) wind up as part of a point-of-sale display.

Our main packaging season is during the summer. We do a certain amount of packaging during the other months of the year; but it's during the summer that our methods get a real workout. And when the orders start piling in, we have to be able to keep up with them. Fast-changing consumer preferences in seeds call for rapid-fire handling of order shipments.

Here's how we manage it:

There are many filling machines of various types for the packets (small envelopes). The difference in equipment is necessary because of the nature of various types of seeds. Capacities of a single machine range from 20,000 up per eight-hour day. For cartoned seed, machines have individual capacities of up to 50,000 per day. The equipment feeds the sealed containers into stock trays which are transported on platform trucks to temporary storage shelves in the packing rooms.

Assortments are made up according to customers' orders and placed directly in the display trays which are transported on four-wheel dollies. Two or three trays are on each carrier. After orders are checked, the trays are placed on a 30-in. wide belt then on a rough surface belt which transfers to a conveyor on the floor below. Seeds which are packaged on this

level join the flow at this point.

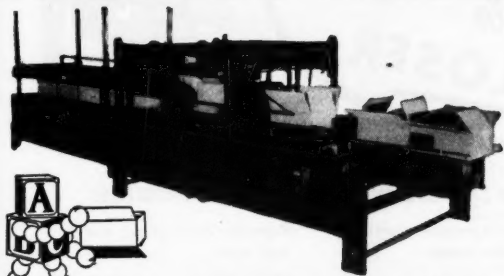
Planned Placement of Fillers

Before a tray is placed in the shipping container, a scored fibreboard section is tied over it to protect the packets. Scoring is designed to compensate for the step-down arrangement of the units within the trays. Of interest is the construction of the bottom tray of a display. This contains a compartment in the rear in which is placed a knockdown shipping carton. This is later used for returning the display to the company after it is repurchased at the end of the selling season. At this time the display containers are repainted and any repairs made.

The following steps constitute a packaging cycle: Two or three filled display trays are placed in a corrugated shipping container. Wooden strips are inserted between the trays to prevent scratching and shifting and to make a more solid package. Knock-down legs for the display are brought to the line in triangular fibreboard cartons. The three-sided shape is designed to fit more securely in the larger container, and also to conserve space.

After the advertising literature is added and the invoice pasted to the back of one of the trays, a fibreboard L-shaped filler is inserted at each corner to take up slack and to provide additional strength. They also give further protection against crushing during the high stacking in storage.

CRAMPED FOR ROOM ?



Save Valuable Floor Space with A-B-C Short Case Sealer

Seals top and bottom flaps of shipping containers . . . speedily, inexpensively, efficiently, AND IN FAR LESS ROOM.

A model for every job . . . both automatic and semi-automatic.

Write for Details and Floor Plans.

Better production-proven machines far faster, lower cost packaging.

(Case Sealers, Unloaders and Unscramblers, Side Sealers, Hand Gluers, Seal-All)

A-B-C

PACKAGING MACHINE CORP.
QUINCY, ILLINOIS

Circle No. 84 on Reader Service Card for more information
FLOW • NOVEMBER, 1950

Circle No. 85 on Reader Service Card for more information

"PUSH BUTTON" STENCIL MARKING!



MARSH
FOUNTAIN BRUSH

Here's the modern way to mark a stencil address in three seconds! Finger tip control of ink flow assures neat, attractive marking on your shipments.

Holds ink for 500 addresses. NEW MODEL HAS THESE FEATURES: Light weight, complete Brush only 6½ ounces. Handle has non-slip grip. Can't leak or clog. Genuine China bristle in replaceable brush tip. Thousands of shipping departments use Marsh Fountain Brushes. Pays for itself in three days! Write for FREE booklet.

MARSH STENCIL MACHINE CO.
67 MARSH BUILDING • BELLEVILLE, ILL., U. S. A.

FORCE CASE NUMBERER

1875-1950
Three quarters of a century's service

MODEL 16

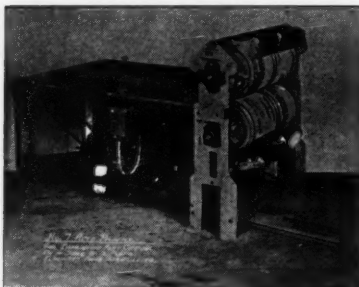
Heavy duty, fully automatic.
Prints legible numbers and markings on wood, cardboard, canvas, etc.



Write for catalog "E" on complete line

WAL. A. FORCE AND COMPANY
INCORPORATED
64 WHITE STREET, NEW YORK 13, N. Y.

Circle No. 86 on Reader Service Card for more information
Packaging Mechanics Section



AUTO PRINTER

**Eliminates Hand Stenciling
Pays for Itself Quickly**

- PRINTS on any or all surfaces of flat cartons, bags, adjusting to the size and thickness of container.
- MARKS 2,400 hourly with address and other information.
- FEEDS containers to pty. rollers.
- REQUIRES minimum of care and set-up. Built for years of trouble-free service.
- MACHINES for marking loaded containers also available.

Send for Free Catalog

**Industrial Marking
Equipment Company**

Dept. F-7, East 48th St., N. Y. 17, N. Y.

*Conveyor Line Markers for coding,
dating and product identification*

Receive Containers . . .

(Continued from page 67)

Smaller load units also make storage and inventory of packing materials more flexible. For example, some packers need only a small amount of a given size while others need three or four times that amount. Since we try to maintain a one month's supply on hand at all times, it is important to keep inventory of supplies at packing stations and in the main storage as low as possible. Ordering in small quantities answered this problem. **RESULTS:** *Major cost savings from reduced inventories were realized.*

At the present time, an average box car contains 40 palletized loads. When possible, loads are received in double-deck fashion so that 80 units make-up a shipment. For effective use of rail car space, four pallets are ordinarily placed in the center of the car. For these loads, pallet runners are at right angles

to the length of the car so they may be easily removed by fork trucks. **RESULTS:** *Maximum use of box car area.*

Receiving Fibreboard Cartons

The lessons learned from receiving wirebound containers were applied to other receivals such as knocked-down fibreboard containers. Before, 2 to 16 bundles of 2 to 50 individual fibreboard cartons were received in rail cars. Often these bundles were piled loose to the roof and sides of the carriers. The same manual handlings were used as before with receiving practices of wirebound crates.

An average of 200 cartons now make-up a palletized load. The pallet consists of a deck made of corrugated paper board; runners are three corrugated paper built-up pads which are glued to the deck. **RESULTS:** *Palletization has reduced handling time by 50 per cent. Higher stacking is possible in storage. Flexibility in storage and inventory. Saves space and reduces inventories at packers.*



FISCHBEIN Portable BAG CLOSER



**CARRY
MACHINE
TO BAGS**

LOW COST SOLUTION TO BAG CLOSING PROBLEMS!

- Complete portable — weighs only 10½ pounds.
- Capacity: 200 bags per hour with ease.
- Requires no plant space or installation—merely plug into any light outlet.
- Handles all types of textile bags and a wide variety of paper bags.

UNCONDITIONALLY GUARANTEED. Efficiency and reliability proved by over 3,000 users.

SIMPLE TO USE. Merely hold in hand and carry to bag. No stand or other support necessary . . . machine is entirely portable. (Suspension unit available as optional equipment.)

CLOSES BAGS TIGHTLY AND SECURELY! Closure is actually stronger than the material surrounding the stitches. Excellent closure if sifting is a problem.

ADDRESS INQUIRIES TO:

DAVE FISCHBEIN CO. INDUSTRIAL SEWING MACHINERY

DEPT. 4-B

38 GLENWOOD AVENUE
MINNEAPOLIS 3, MINNESOTA

Circle No. 88 on Reader Service Card for more information

Packaging Mechanics Section

70

NOVEMBER, 1950 • FLOW

FLO

FLOW ENGINEERING DATA PAGE



A feature designed to help the engineer and others responsible for material handling. The FLOW Engineering Data Page will cover a different category of equipment each month.

(From the FLOW Directory of Material Handling Equipment, Machinery and Accessories)

CRANE WHEEL LOADS APPROXIMATE FOR ESTIMATING ONLY—4 WHEELS PER CRANE

The wheel loads given below are sufficiently accurate for preliminary estimates. Actual loads will vary with different types, methods of construction, service requirements, etc., and should be calculated from the design drawings, or obtained direct from the crane manufacturer.

Overhead Electric Traveling Double Girder Cranes			Hand Geared Single "I" Beam Cranes with Chain Hoist & Trolley			Hand Geared Double "I" Beam Cranes with Cable Reeved Trolley Hoist					
Capacity (Tons)	Span (Feet)	Wheel Load (Pounds)	Capacity (Tons)	Span (Feet)	Wheel Load (Pounds)	Capacity (Tons)	Span (Feet)	Wheel Load (Pounds)			
3	20	8,400	1	10	1,500	3	15	4,400			
	25	8,700		15	1,600		20	4,500			
	30	9,200		20	1,700		25	4,650			
	35	10,000		25	1,800		30	5,200			
	40	11,500		30	1,850		35	5,500			
	50	12,500		35	1,900		40	5,900			
	60	15,000		40	2,000	5	15	6,750			
5	70	16,000	2	10	2,550		20	6,900			
	20	10,900		15	2,700		25	7,100			
	25	11,500		20	2,800		30	7,300			
	30	12,100		25	2,900		35	7,500			
	35	12,800		30	3,000		40	8,000			
	40	13,200		35	3,100	7½	15	9,300			
	50	14,500		40	3,200		20	9,400			
7½	60	16,600	3	10	3,600		25	9,600			
	70	17,700		15	3,650		30	9,800			
	20	14,500		20	3,750		35	10,400			
	25	15,300		25	3,900		40	10,700			
	30	16,000		30	4,000	10	15	11,700			
	35	17,000		35	4,050		20	11,900			
	40	17,500		40	4,200		25	12,300			
10	50	18,800	5	10	5,900		30	12,800			
	60	20,500		15	6,000		35	13,200			
	70	23,000		20	6,300		40	13,400			
	20	17,300		25	6,450	15	15	18,250			
	25	17,700		30	6,600		20	18,400			
	30	18,200		35	6,700		25	18,600			
	35	19,000		40	6,900		30	19,100			
15	40	20,400	10	10	11,300		35	19,600			
	50	22,100		15	11,400		40	20,900			
	60	24,500		20	11,600	20	15	21,750			
	70	25,500		25	11,800		20	22,900			
	20	23,500		30	12,000		25	24,150			
	25	24,400		35	12,250		30	24,500			
	30	25,100		40	12,400		35	25,100			
20	35	25,500	Underhung Single "I" Beam Cranes with Chain Hoist & Trolley	1	1,500		40	25,800			
	40	26,400			Hand Push Single "I" Beam Cranes with Chain Hoist & Trolley	15	29,050				
	50	27,000				20	29,300				
	60	29,200				25	29,700				
	70	30,000				30	30,250				
	20	28,000				35	30,900				
	25	29,500				40	31,500				
25	30	32,000	Capacity (Tons)	Span (Feet)	Wheel Load (Pounds)	Capacity (Tons)	Span (Feet)	Wheel Load (Pounds)			
	35	33,000									
	40	34,000							1	10	1,300
	50	36,000								15	1,350
	60	39,000								20	1,400
	70	42,000								25	1,475
	20	38,000								30	1,600
30	25	39,000								2	10
	30	40,000							15		2,500
	35	41,000							20		2,600
	40	41,500							25		2,750
	50	43,000							30		2,850
	60	44,600							3		10
	70	47,000								15	3,700
20	44,500	20								3,775	
25	45,500	25								3,900	
30	47,000	30								3,975	
35	35	48,500								5	10
	40	50,000							15		5,950
	50	52,000							20		6,075
	60	55,500							25		6,300
	70	57,000							30		6,375

USEFUL

BULLETINS • BOOKLETS • CATALOGS

The publications featured on these pages were written by experts. They are **FREE** publications. To obtain them use the postcard bound into this issue.

Conveyors

A four-page brochure put out by Phillips Conveyor Company shows you what its portable truck-to-bin conveyor can do for you. The 12-foot model weighs just 95 pounds (built like an airplane, Phillips says). Complete construction details and illustrations included.

Circle No. 89 on Reader Service Card for more information

Two novel vibrating machines are described by the Robins Conveyors Division, Hewitt-Robins, Inc. in its latest bulletin. The first is a Vibra-Feeder employing mechanical (rather than electro-magnetic) means of operation. It is claimed that this method eliminates a great many parts. Only 2 ampere-draw is required from its 1-2 hp motor. Second is a Vibra-Veyor which produces balanced mechanical operation without counterweights. One unique feature claimed for this unit. The ability to produce from lengths up to 200' activated by a single vibrator.

Circle No. 90 on Reader Service Card for more information

Anchor Steel and Conveyor Company has produced a sixty page book on new conveyor designs and applications. Over fifty pictures of different types of conveyor applications with accompanying sectional drawings are included. New innovations in standard designs are described. The new book deals specifically with conveyors for small parts, scrap and chip handling. Several pages are also devoted to Anchor Automatic Overload Cut-Outs for pulley or direct power drives.

Circle No. 91 on Reader Service Card for more information

The Philadelphia Belting Company has just released a new price list that it calls a radical departure from systems employed in the industry for almost half a century. "For years consumers and purchasing men were plagued with complicated plus and minus discount clauses and special multiplication tables whenever they sought a price of a particular length and ply of belting," Howard Josephson, spokesman for the Philadelphia Company, stated. "So we decided to simplify matters for both consumer and manufacturer by organizing the sorely needed simpler price schedule that shows actual prices for each item understandable to anyone at a glance."

Circle No. 92 on Reader Service Card for more information

Cranes, Hoists, Derricks

A manual for crane men and hitches has been prepared by Allis-Chalmers Manufacturing Company, for use as a guide to both management and workers. The 36-page booklet contains recognized crane signals, a long list of safety hints, instructions on making out the daily crane operation report, and a raft of other useful information.

Circle No. 93 on Reader Service Card for more information

A rope reference chart has been released by New Bedford Cordage Co. It gives specifications on manila, nylon and sisal ropes. This handy wall chart measures 17" by 22" and is attractively designed. Such data as rope diameter, circumference, approximate net weight of 100 ft., approximate gross weight of full coils, breaking strength and working strength are included for sizes ranging from 3/16" to 3 3/4" in diameter.

Circle No. 94 on Reader Service Card for more information

An 18-page catalog on the Lorain-TL Series of power shovels and cranes has been made available by The Thew Shovel Co. This series of machines in the 1/2 and 3/4 yd. classes may be mounted on a wide variety of crawler and rubber tire mountings, according to varying ground and travel needs. It includes Self-Propelled and Moto-Crane models. The combinations available to choose from are explained in detail in this new catalog. The interchangeable "units" or "packaged" assembly made by Lorain is illustrated in a series of "phantom" and "built-up" views.

Circle No. 95 on Reader Service Card for more information

A complete line of Steel Derricks, with capacities of up to 250 tons, is shown in American Hoist's 36-page Catalog, No. 200-D-3. The six different types of derricks are treated separately in sections which include complete specifications, outline drawings and full page operating pictures. Following these sections are complete construction details from boom point to sill connections. One page is devoted to the correct method of determining boom length for lifting a required load to a pre-determined height at a given radius. Briefly covered are lifting beams, swiveling fairleaders, blocks and sheaves, as well as revolver cranes and hoists.

Circle No. 96 on Reader Service Card for more information

Motors, Pumps

Information on troughing idlers and return idlers of improved design which are said to eliminate "high-speed rattle" and reduce maintenance costs is available in two folders issued by The Conveyor Co. Covered are features of the new "snug" design and its application to permanently lubricated ball-bearing type idlers and roller bearing idlers. Each type troughing idler is designed for specific fields of use. Applications of these idlers varies from sanitary food handling to rugged operations in mines, smelters, pits and quarries, etc.

Circle No. 97 on Reader Service Card for more information

Design and construction features of a close-coupled pump and motor—the Electrifugal—are described in a new bulletin released by Allis-Chalmers Manufacturing Company. The Electrifugal has a single shaft mounted in a unit-cast frame. The pump is available with drip-proof, splash-proof, totally-enclosed, fan-cooled or explosion-proof motor enclosures. Some sizes can be had with removable casing, others with removable cover plate. Pumps are available in ratings from 10 to 500 gallons per minute at heads to 220 feet. Motors are rated from $\frac{3}{4}$ to 10 horsepower.

Circle No. 98 on Reader Service Card for more information

Bulletin B-1001—just released—contains full construction, assembly and application data, with illustrations, on the variety of types in which Star-Kimble D-C motors and generators are available.

Circle No. 99 on Reader Service Card for more information

Link-Belt P.I.V. Variable Speed Drives are illustrated and described in a new 88-page book published by Link-Belt Company. A special feature of the new-book is the convenience with which a P.I.V. of the right specifications for a specific service may now be selected directly from its 36 pages of "Pre-selected Drives." Diagrams of automatic speed control applications, and pages of photographs showing a great variety of P.I.V. installations throughout the industries, are included.

Circle No. 100 on Reader Service Card for more information

Hand Pump . . . The Tokheim High Vacuum Hand Pump, for industrial and general use, is the subject of a two-color pamphlet issued by the Tokheim Oil Tank and Pump Co. Photographs and drawings show various industrial applications. The unit will deliver approximately 20 G.P.M. (based on 100 strokes per minute). According to the release, it requires a minimum push-pull force at comfortable arm height. More than 10 models are described, with emphasis on the particular features of each. One page shows an exploded view of one model with all principal components labeled.

Circle No. 101 on Reader Service Card for more information

Vari-Pitch drive, a simple, low-cost method of instant speed control covering most speed changing needs from 1½ to 40 horsepower, is described in a new 12-page bulletin

released by Allis-Chalmers Manufacturing Company. To increase speed when employing this drive, you simply move the motor toward the driven sheave. Moving the motor away decreases the speed. Belt tension is automatically maintained and a speed variation of approximately 2 to 1 is possible. Vari-Pitch sheave has been used on all types of textile machinery; to vary the speed and rate of delivery of pumps, blowers and compressors; to provide variable speeds for variable frequency generators and many other types of testing machines; to synchronize speeds on packaging machinery and conveyors; to provide variable speed on machine tool spindles; to drive mixers and agitators, and to vary the speed of many other types of equipment.

Circle No. 102 on Reader Service Card for more information

Packaging, Strapping

A new folder on foot and motor operated stapling machines has been announced by Bostitch. The new folder describes and illustrates the many models of foot and motor operated "E" machines which are available to help solve any number of fastening problems—from sealing bags to carding perfume bottles. There is also a section of this eight page folder which describes how these Bostitch staplers have replaced other fastening methods to speed up production and cut costs.

Circle No. 103 on Reader Service Card for more information

Wooden Containers . . . Descriptive literature, offered by G. B. Lewis Co., contains details on its line of wooden containers for storage, inter-plant shipping and general handling. They may be transported by conveyor, hand truck or on skids or pallets with powered rolling equipment. With runners added, they may be handled individually by fork trucks. Many photos show a wide variety of industrial applications. Cutaway views show basic construction features.

Circle No. 104 on Reader Service Card for more information

Strap Dispenser . . . Model DF 10 strap dispenser is the subject of a leaflet issued by Signode Steel Strapping Co. According to the manufacturer, the equipment keeps the flow of strapping under control at all times; it pulls forward on the strap and back on the reel at the same time. The hub cap and top disk need only be removed for loading. The dispenser may be used in a vertical or horizontal position.

Circle No. 105 on Reader Service Card for more information

Better Packages, Inc., makes automatic sealers. Its Big-Inch No. 4 automatic sealer is one of its newest, described in literature just published by Better Packages. Unique

feature of Big Inch No. 4 is its ability to slit the strip as it is dispensed. The four-strip slitter model gives you two ½-inch strips or four ¼-inch strips. Other models do different slitting jobs.

Circle No. 106 on Reader Service Card

Pallets, Skids, Trucks

Recommendations of the American Standards Association on the safe handling of industrial trucks have been

published as a Safety Code for Industrial Power Trucks and approved by ASA as American Standard (B56.1-1950). The standard applies to industrial trucks of both the driver-ride and driver-lead types, such as platform trucks, tractors, low-lift trucks, high-lift trucks, fork trucks, and special purpose trucks.

Circle No. 107 on Reader Service Card

The Rapids-Standard Company, Inc., has published a 36-page booklet in two

colors, cataloging the complete line of Rapistan casters and trucks. Specifications and construction details accompany the description of each piece of equipment. A companion-piece to this catalog is the company's latest price list for all Rapistan equipment.

Circle No. 108 on Reader Service Card

A 24-page catalog covering their line of corrugated steel boxes, skids, pallets and combination units has just been published by the Union Metal Manufacturing Company. The catalog shows recently designed single units and skid-box-pallet combinations.

Circle No. 109 on Reader Service Card

Specialized Equipment

Unusual savings in handling a wide range of diversified materials in a Texas iron works are revealed in a new Certified Job Study prepared by Towmotor Corporation. The photo-illustrated job study reports, for example, how composition roofing that could be stacked no higher than 3 ft. 6 in. without lower panels sticking together, is now safely stacked ceiling high. Required floor area was cut from 3,946 to 1,953 sq. ft.—a space saving valued at nearly \$13,000. Equally dramatic savings are shown in the handling of wire, nails, drums, and other materials, with man-hour costs cut 50% to 75% and storage space increased up to 300%. Analysis shows how \$3,000 a year was saved on one item alone.

Circle No. 110 on Reader Service Card

Two new movies have been produced by Clark Equipment Company, Industrial Truck Division. They are: "Bottling Without Bottlenecks," showing modern handling of beverages in bottling plants and distribution warehouses of varying sizes—a 25-minute, black-and-white 16 mm. film with sound. "Handling Rolls With The Bartel Device," showing an astonishing new device designed for fast, safe handling of huge rolls of newsprint and other cylindrical items with hollow cores—in action on marine and rail terminal receiving platforms in warehouses—a 12-minute black-and-white 16 mm. film with sound.

Circle No. 111 on Reader Service Card

INDUSTRIAL TRUCKS

... how to tell when they are

Busy?
Idle?
Lifting?
Engine Running?
etc.

PUT ON Servis Recorders!

A couple of screws or bolts does the job. Then the truck itself writes its own story!

Standing
Traveling, etc.

THE CHART

Wax covered, no ink or pencil needed; a sapphire stylus marks the record—a picture of the day's work at a glance.



SERVIS RECORDER—closed. Just bolted on—no connection with any moving part.

★ **"USER OF THE MONTH"**
THOMPSON PRODUCTS, INC.
They have put Recorders on 25 industrial trucks, with sensational results. See article in this magazine.

Write for the full story.

THE SERVICE RECORDER CO.
1373 Euclid Avenue • Cleveland 15, Ohio

The Servis Recorder
Keeps Trucks Busy

Circle No. 118 on Reader Service Card for more information

Engine-hour meters provide protection for powered equipment by telling how many hours it has run, how many it has to go before maintenance is due. The John W. Hobbs Corporation has a four-page booklet available that shows how its meter works, what it might do for you.

Circle No. 112 on Reader Service Card

Westinghouse Electric Corporation has filled an 18-page booklet with photos of the motors and accessories it makes for mills. Its Hevi-Duty DC Mill is shown in a step-by-step stripdown fashion with each essential part thoroughly explained. Magnetic Controllers are described and illustrated, too.

Circle No. 113 on Reader Service Card

Another bulletin in the new Star series, Number B301, describing their Wound-Rotor Induction Motors, has just been issued by Star-Kimble, Motor Division of Miehle Printing Press & Mfg. Co., Bloomfield, New Jersey. Fully illustrated, this bulletin contains complete construction, assembly and application data for these motors.

Circle No. 114 on Reader Service Card

Stephens-Adamson Mfg. Co. will send a colorful folder on its box car unloader for handling grain, dry chemicals, sand, cement and practically all bulk materials up to two-in. lump size. A pantograph arm equipped with a scoop reaches into a boxcar until it meets an obstruction, drops down and withdraws a load, discharging it into a track-side hopper. The operation is said to be completely automatic. Graphic on-the-job photos are supplemented by detailed text. Construction features are detailed.

Circle No. 115 on Reader Service Card

Model "200" Carloader is recommended for handling bulk grain, chemicals, fertilizers, or other pulverized, granular, free-flowing materials. It is covered in detail in Bulletin No. 27 offered by Sprout-Waldron & Co. According to the manufacturer, cars are loaded without the disagreeable dust and slow work of hand shoveling. The large hopper and powerful air flow of the equipment accommodates two trucks at the same time and shoots the loose grain

both ways into the railroad car. Model "200" is offered in two styles: all-weather permanent inside installation permits car loading directly from mill building or grain elevator; portable compact outside installation can be moved quickly into place for efficient materials handling from truck to railroad car. Units can be specified to meet individual materials handling requirements and can be belt or motor driven.

Circle No. 116 on Reader Service Card

"Handling Groceries The 'Certified Way,'" is the title of a new Clark Equipment Company film showing the unloading of freight cars and highway carriers, warehousing materials, order selection and other handling operations characteristic of well organized wholesale grocery establishments—a 12-minute, black-and-white 16 mm. film with sound. All Clark films are available on a loan basis.

Circle No. 117 on Reader Service Card



many dependable trucks

K&J

one dependable source

Over 95 standard models of two wheel trucks, platform trucks and trailers. Special trucks and trailers up to 50 ton capacity designed and built to your specification. All built with 80 years of skill by pioneers in the industry. Complete engineering service for special design. Write for catalog or tell us what you need.

WRITE FOR CATALOG

THE KILBOURNE & JACOBS MFG CO.

796 CONGRESS ST., COLUMBUS 16, OHIO

Circle No. 119 on Reader Service Card for more information

Flow DIGEST

The subject matter contained in each of the following digests was obtained from the magazine to which we give credit below.

Institution of Production Engineers, June 1950. "Material Handling—Job of Production Engineering", page 255. Points stressed: need for greater consideration to flow of materials between productive units or machines in plant.

Advantages of material handling and suggested standards for more precise control; typical production unit layout; necessity for production engineers to widen their scope in material handling field.

Mining Engineer, June 1950. "Electronic Tramp Iron Detector for Ore Conveyor Belts", page 704. Features of equipment: tramp iron and steel moving on belt cause small currents to be generated in coil situated in strong magnetic field, which are converted to alternating current and are amplified. Output voltage from amplifier fires thyatron with relay in its anode circuit which actuates howler and simultaneously drops spot of marker material on belt.

Iron & Steel Engineer, May 1950. "Coil Handling in Steel Industry", page 59. Handling of wide coils in wide strip mills; methods of handling coils, stocking coils, etc., in 25 of the largest mills which replied to questionnaire. Charts, tables and illustrations augment text.

Ceramic Industry, May 1950. "Buffalo Mechanizes for Quality", page 82. Methods and equipment used at Buffalo Pottery, Inc. Aims: to eliminate handling steps in forming, improve quality of product, lower cost of product, and improve working conditions. Quality control is stressed.

Iron & Steel Engineer, May 1950. "Material Handling in A Steel Plant", page 51. General problems and accomplishments in handling of materials. What improved material handling methods were adopted by Jones and Laughlin Steel Corp.

Pacific Market Review, May 1950. "Preventable Losses in Export Packaging", page 43. Chief points: sound export packaging techniques, classification of preventable losses, rules for better export package, packing in crates, export marking, steel shipping containers, cargo damage prevention.

Iron Age, June 15, 1950. "Rheem Forms 55-Gallon Drums After Color Lithography", page 99. Equipment and operations in container fabricating technique. Full size industrial drums are produced with accurately lithographed, multi-colored exteriors and sanitary, non-corrosive interiors. Internal and external coatings are applied before forming operations; forming does not mar surface finishes. Results: output was increased and rejects were decreased.

IT'S NEW— a low cost Collapsible Pallet Box

Here's a brand new money saver for in-plant storage and handling of materials, loose, bulk or packaged, and for outside shipments too. Its low initial cost will save thousands of dollars for plants using pallets in quantity.

The new B-G Wooden Collapsible Pallet Box is light in weight but built strongly enough to handle weights up to 3000 lbs. and more and is sturdy enough to stand up under many repeated shipments.

The collapsible feature is made possible by the exclusive Bigelow-Garvey TIGHT CORNER hinge design used on all of our collapsible wood shipping crates.

Used as a storage box, a tote box or as a shipping container, you will like this sturdy but inexpensive addition to effective materials handling.



Above: Photo shows how pallet box is easily attached to any standard pallet by means of 4 flanged corner irons (furnished by us) and a single steel strap, either flat or round.



Right: Photo shows hinged box collapsed for storage or return shipment.

Tops can be furnished if desired.

FOR COMPLETE DETAILS AND PRICES WRITE . . .

BIGELOW-GARVEY LUMBER CO.

General Office and Laboratory

326 West Huron Street • Chicago 10, Ill.

Mills: Arkansas • Georgia • Wisconsin • Minnesota • Illinois

Circle No. 120 on Reader Service Card for more information

"Elec-
r Ore
res of
mov-
to be
strong
ed to
lified.
s thy-
circuit
ltane-
ial on

"Coil
ge 59.
strip
stock-
t mills
charts,
text.

Buffalo
e 82.
Buffalo
e han-
quality
et, and
quality

"Ma-
e, page
nplish-
What
ethods
ughlin

1950.
Pack-
and ex-
ssifica-
or bet-
crates,
contain-

Rheem
Color
ent and
eating
drums
litho-
rs and
Inter-
applied
orming
Results:
ts were

FLOW



For Rugged Lifting at Low Maintenance Cost

You can't equal a KELLER *Air* HOIST

Lifting the heavy housing assembly for that workman... a matter of seconds... without strain or fatigue. You see, he's lifting with the Keller one-man Air Hoist.

His employer, Peerless Pump Division, Food Machinery and Chemical Corporation, says "portability, low hook-to-hook dimensions, and variable speed features make the Keller a utility tool of unusual adaptability in our assembly lines."

This commendation is a typical one from factories, shipping rooms, tool rooms and foundries using Keller Air Hoists for tough lifting. They find it's lighter than other hoists of similar capacities, can be carried, set up, used by one man... even where head-room and wall-clearance is limited. Maintenance cost is at a low, low level!

Just attach the "handful of power" to an air line. Hoists of 500, 1000 or 2000 lb capacities lift at the rate of 17 ft a minute; 300 lbs at 75 ft a minute.

Today's business "partnership" between management and men welcomes fast equipment to lift men's burdens, turn maintenance debits into credits. Our Air Hoist does just that! It also gives you complete ordering data so that you can order direct.

(Keller Air Hoists are sold and serviced through our branch offices throughout the United States or direct from the factory.)



KELLER

Pneumatic Tools

KELLER TOOL CO., GRAND HAVEN, MICH.
Circle No. 121 on Reader Service Card

Yale & Towne Board Chairman Dies

Joseph A. Horne, Chairman of the Board of Directors of the Yale & Towne Manufacturing Company, died here recently after a brief illness. He was 82. During his 58 years with Yale & Towne, Mr. Horne worked closely for three decades with Henry Robinson Towne, co-founder of the company. Mr. Horne became one of the leading personalities in Yale & Towne's material handling activities. He started his long association with the firm in 1892 as a foreman, rose to vice president in charge of production in 1920. Since 1943 he was chairman of the board of directors.

Nivling Leaves Lewis-Shepard

Lyman E. Nivling has resigned his position as General Sales Manager of Lewis-Shepard Products, Inc., after 16 years with the Massachusetts manufacturer of material handling equipment. A successor to Nivling has not yet been named.

Crescent Truck President Dies

Claude D. Eiler, president of the Crescent Truck Company, died recently of a heart attack. He was 55. Eiler suffered a heart condition this spring, but seemed greatly improved in recent months. He continued with his work at Crescent until September, when he had a serious relapse. Mr. Eiler began his affiliation with Crescent in 1921 as a draftsman, was later named treasurer. He became company president in 1946. During World II he was a member of the Interstate Power Truck Industry Advisory Committee of the War Production Board.

Yale & Towne Names New Ad Agency

Philip B. Niles, Vice President in Charge of Marketing, has announced the appointment of Ruthrauff & Ryan as new advertising agency for Yale & Towne Manufacturing Company.

Cleveland Distributor Opens New Quarters

Ohio Equipment Company, Inc., Cleveland material handling equipment distributor, recently opened its new sales-service depot at 1220 West 9th Street. E. M. Abramson, president of the 39-year-old company, made the announcement of his new headquarters, saying, "We have served this area for years and are in a better position today than ever before to give our customers the tops in service."

BREAK the BULK Material BOTTLENECK IN YOUR PLANT WITH

Handy,
Efficient



TOTE

SYSTEM

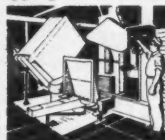
The NEW Improved Method now revolutionizing BULK MATERIALS Handling in many industries

Modernizing methods for handling materials in bulk has become the watchword of progressive industries from coast to coast. For the first time in generations, TOTE SYSTEM* provides a practical, efficient, economical answer to most, if not all, your bulk materials handling, shipping and storage problems.

Briefly, TOTE is a system for handling such bulk materials as flour, sugar, cement, carbon black, paint pigment, powdered milk, and other dry granular or powdered materials, in convenient, gleaming 74 cu. ft. aluminum containers known as "TOTE BINS*". Filling and discharging equipment together with the bins, comprise the TOTE System. Advantages gained: elimination of sources of contamination and deterioration; prevention of rodent and insect infestation; stopping of container



losses through breakage, spilling or sifting; elimination of disposable container expense; saving on damage claims, pilferage losses; retention of



original quality of product. These are but a few of the important advantages you will enjoy once TOTE SYSTEM* goes to work for you.

Many industries throughout the nation are enthusiastic users of TOTE SYSTEM*. Let us send you their comments based on actual experience. Write at once for this and other detailed, illustrated information.

*Both TOTE and TOTE System Reg. U. S. Pat. Off.

TOTE SYSTEM, Inc., Beatrice, Nebr. Dept. F-3

Without obligation, send me information on TOTE

Name _____

Firm _____

Address _____

City _____ State _____

Circle No. 122 on Reader Service Card

One Sure Way to CUT COSTS!

use a C-F SHEET LIFTER



The A. B. Dick Company, Niles, Illinois, found that this C-F Lifter has substantially reduced man hours and crane time required to move stock in and out of storage.

Up to 10,000 lbs. of high grade sheets in varying widths may be picked up, carried and unloaded at shears or machines with speed and

economy by the Lifter and its operator.

C-F Lifters are made in standard or semi-special models to handle from 2 to 60 tons. Bulletin SL-25 describes the advantages you can obtain from C-F Lifters. Write for it today.



CULLEN-FRIESTEDT CO.

1320 South Kilbourn Avenue • Chicago 23, Illinois

\$5265⁰⁰
F. O. B. Waverly, Ia.
(less truck)

pays DIVIDENDS FAST!

NEW low-cost Bantam* crane, with 5-ton lifting capacity on rubber tires, easily handles hundreds of industrial jobs at big saving in time and labor. Travels anywhere around plants, yards, or cross country at speeds to 35 m.p.h. Unloads railroad cars, trucks . . . stockpiles materials . . . spots steel . . . loads coal, scrap, pipe, logs, etc. Handles 50' boom . . . 23" magnet . . . 6 versatile digging and lifting attachments. Backed by nationwide distributor service. Write for complete details. *Reg. U. S. Pat. Off.

SCHIELD BANTAM

CRANES • EXCAVATORS

SCHIELD BANTAM CO.
251 Park St., Waverly, Iowa

Send details on truck-mounted Bantam ☐ Crane ☐ Excavator

Name Title

Company

Address

City State

SB-1-1

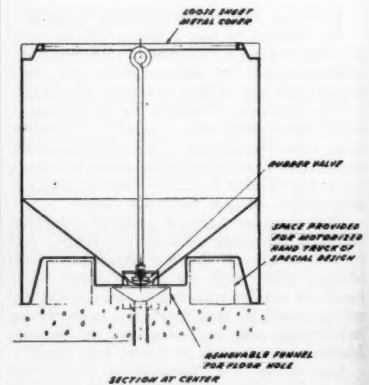
Costs less...Travels 35 M.P.H....Gets more jobs done

Storage Bin . . .

(Continued from page 47)

our 6,000 lb. capacity elevators; and the hand-guided machine's short turning radius makes it handy in the narrow aisles of our old building.

After the new bins had been used for a while, our surprised handling engineers realized that they made more than an ideal storage method: they were perfect as handling units, too. They replaced the old 1600 lb. capacity containers in a hurry. About half the height of the old containers was in their legs: that waste space was chucked out in the design of the new bins. And the new bins move two-and-a-half times more material per trip, without as much sweating for the operators.



THE SPECIAL CLOSURE DEVICE at the bottom controls the flow of granules from the box. A rubber valve and a steel rod does the trick.

The stepped-up production rate that the new bins made possible caused company officials to change their minds about buying a new building. They had figured on building a new plant because storage space was closing in on them so fast.

So the containers we originally designed for storage use became the basis for our handling system. Now, the bin is taken to the process machinery and from there to the storage—without rehandling of the fixed bins. And we saved thousands of dollars that were almost poured into a new building.

Circle No. 125 on Reader Service Card for more information

MODERN CRANES

INCREASE EFFICIENCY AND
REDUCE MAINTENANCE COSTS
WITH AN UP-TO-DATE FLUID
DRIVE **IMCO** CRANE

Precision low-headroom, 2 ton capacity 36
foot long under-running IMCO crane with
integral fluid drive illustrated.

Precision Bearings Thru-out • Hardened
Steel Wheels • All Steel Construction
Full line of Cranes and Monorail available

Write for complete information

INDUSTRIAL MONORAIL & CONVEYOR COMPANY

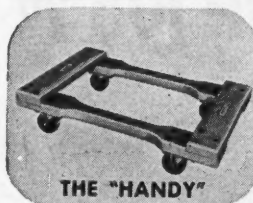
1819 HARLAN STREET

PHILADELPHIA 21, PA.

Circle No. 126 on Reader Service Card for more information

DOLLIES, SKIDS, TRUCKS

Built to meet all
tough requirements



THE "HANDY"

● IRONBOUND DOLLIES

The "Handy", one of a full line
of dollies, has shaped frame for
comfortable hand grip. Equipped
with four swivel casters. 3" dia.
wheels—choice of steel or rubber.

Ironbound engineers will help you with your handling
problems. We design and build super structures to
handle special products at lower handling costs.



**ROL
TRUK**

● The RolTruk will "pick-up and
go" with paper rolls, drums, bar-
rels, etc. Available in several
models with capacities ranging
from 500 to 2000 lbs. Ask for
illustrated bulletin 10RT.

Standard line of Ironbound Skids,
Semi-Live Skids, Dollies and Floor
Trucks is fully illustrated in Cata-
log GP-7. Write for a copy, today.

BOUND TO DO BETTER
Ironbound
MATERIALS HANDLING EQUIPMENT

IRONBOUND

BOX & LUMBER COMPANY
Materials Handling Division

30 HOFFMAN PLACE • HILLSIDE, N. J.

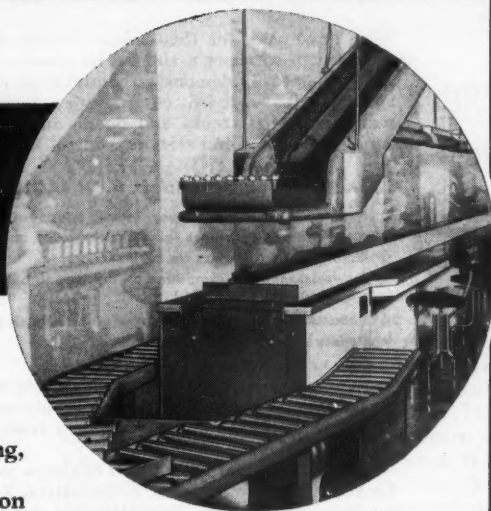
SKIDS • SEMI-LIVE SKIDS • DOLLIES • FLOOR TRUCKS



There's profit in easy handling

...with **Buschman Conveyors**
in all industries!

Eliminate the hidden handling costs of manual pushing,
pulling, lifting of materials. Put your products on
BUSCHMAN Conveyors—the magic carpets of indus-
try—and you will move products faster, and at greater
profit. Write for descriptive bulletin on how to give
your products an easy PROFIT RIDE—with **BUSCH-**
MAN. Agents in Principal cities.



Buschman
Conveyors

THE E. W. BUSCHMAN CO., INC.

4450 Clifton Ave. Cincinnati 32, Ohio

Circle No. 127 on Reader Service Card for more information

FLOW • NOVEMBER, 1950



SALES UP 105%

What's Behind the Tremendous Demand for U.S. Innacush?

Why have sales for this unique cushioned solid tire skyrocketed in so short a time? The answer lies in the U. S. Innacush's easily demonstrated ability to please purchasing agents—with reduced costs; superintendents—with less maintenance on trucks and floors; and drivers—with unequalled comfort and steering control.

Look What You Get with U. S. INNACUSH:

- ★ Maximum vibration dampening with minimum rolling resistance.
- ★ More sharp lug surfaces for efficient traction and easy steering.
- ★ Greater tread thickness for long service.
- ★ Cut-resistant tread compound all the way through.
- ★ Higher carrying capacity.
- ★ Reduced maintenance costs; from oil lines to steering gear.
- ★ Definite reduction in operator fatigue.

U. S. Innacush is available in a complete range of sizes for almost every industrial truck, and is only one type in a complete line of U. S. Industrial Tires ready to serve your materials handling needs.

Your U. S. Royal Distributor can show you how the U. S. Innacush and the entire U. S. Industrial Tire line will save you money, and how his on-the-spot service will cut your "down time" costs. He's in the Classified Telephone Book—call him today.

U. S. ROYALS

Products of UNITED STATES RUBBER COMPANY



Circle No. 128 on Reader Service Card for more information

Men In the News

(Continued from page 53)

since 1936, has been named Manager of Production; C. Eugene Moore, formerly assistant to Plant Manager of Electro-Motive Division, General Motors, Chicago, has been named Works Manager; Bruno A. Moski, Chief Industrial Engineer, was formerly resident field engineer at the Philadelphia Division of Yale & Towne representing the George H. Elliot Company.

... at General Electric:

JOHN J. MILLER has been appointed manager of the industrial division, St. Louis Office, of the General Electric Company's Apparatus Department Mid-States District. In his new job, Mr. Miller will be responsible for all sales to industrial companies in the St. Louis area of the department's newly created twelfth sales district.

... at W. H. Brady Co.:

JOHN P. CONDE has been named Advertising and Sales Promotion Manager of the Brady-Milwaukee Division of W. H. Brady Company. Brady manufactures Quik-Label wire, and identifying labels for pipes and conduits. Mr. Conde will be located at Brady-Milwaukee Company's Milwaukee office.

... at Westinghouse:

GEORGE H. McBRIDE was recently named by T. I. Phillips, company vice president, as new manager of the Westinghouse Electric Corporation's gearing division. McBride, manager of sales for the division since 1942, succeeds L. R. Botsai. Mr. Botsai has moved to the Buffalo plant as manager.

... at United Board & Carton:

EDWIN W. KALER has been appointed General Sales Manager of The United Board & Carton Corporation. Mr. Kaler will make his headquarters in Syracuse at the company's general offices.

... at Morse Chain:

J. NALL CANDLER has been given the job of Administrative Assistant to F. M. Hawley, President and

General Manager of Morse Chain Company (a division of Borg-Warner Corporation). Mr. Candler formerly was Assistant General Manager of the Norge Division of Borg-Warner. He was particularly active during the war on engineering projects for B-W.

... at Goodyear:

CHARLES P. Joslyn, manager of Goodyear Tire & Rubber Co.'s General Products Division, has resigned, effective June 1, to enter business with his two sons. An announcement, made by R. S. Wilson, vice president in charge of sales for the company, includes the appointments of R. E. Pauley, former manager of Goodyear's Molded Goods Sales at the St. Mary's, Ohio, plant, as manager of the Airfoam Department in Akron; R. C. Hogan, who continues as sales manager of Airfoam; J. A. Bernel, who continues as assistant sales manager of Airfoam, and E. E. Ellies, former assistant manager of the General Products Division, who is named manager of the Film and Flooring Department.

... at Gould:

TO OFFER expanded sales engineering facilities to midwestern purchasers of industrial batteries, the Chicago regional offices of the Gould Storage Battery Corp., Trenton, N. J., has moved to larger quarters. The Chicago office, headquarters for sales representatives and field engineers servicing industrial battery users from the Rocky Mountains to Ohio, is headed by R. C. Cragg, midwest regional manager. C. W. Hanna is the Chicago district manager.

... at Signode:

JAMES R. Williams was recently appointed sales promotion manager of Signode Steel Strapping Co., Chicago, according to an announcement by J. H. Leslie, company president. Williams, in addition to his sales promotion duties, will direct advertising and publicity activities. Williams has been with Signode since 1946, and prior to his appointment as sales promotion manager he was located in the Portland office.

... at Island Equipment:

JOHN W. STILES, vice president and general manager of Island Equipment Corp., has announced the appointment of Nicholas W. Gross to the position of field manager. Gross will make regular trips to all representatives to assist in training of personnel and to inform them of the latest developments in the company's line of equipment.



Bulky materials easily transported inside and outside the plant. Dozens of such jobs can be handled by the Prime-Mover.

Prime-Mover helps keep the plant clean. Bucket takes all kinds of scrap, large and small.



GET MORE VALUE FROM YOUR MAN-HOURS

- - you can do it many fold with

THE PRIME-MOVER!



Gear driven—no belts or chains

Engine protected against dirt

Turns in its own length, 63½"; width 31½"

Converts from bucket to platform without tools

Eight hours continuous running on 3 gal. of fuel

Bucket holds 10 cu. ft.

THIS versatile machine is doing a remarkable job in many plants. It can do the same for you. If some particular problem of material handling is bothering you—the Prime-Mover can answer that one and additionally help in a number of other ways, too. This rugged unit works outdoors and indoors to keep things moving. Here is a labor saver that has cut handling costs as much as \$36 a day. Send coupon. We'll send you complete information at once.

THE PRIME-MOVER CO.
MUSCATINE, IOWA



THE PRIME MOVER CO., Muscatine, Iowa

Gentlemen: Please send information on Prime Mover for handling

Your Name

Company

City State F-10

Circle No. 129 on Reader Service Card for more information

The Shortest MOTORIZED, BATTERY OPERATED Walkie Pallet Truck built...

**..AND NO OTHER
TRUCK OF THIS
TYPE HAS AS
EASY CONTROL**

The
MOTO-TRUC

has many other exclusive advantages - -

LESS WORKING PARTS AND EASIER ACCESSIBILITY—a time saver in inspecting and servicing.

POWERFUL AND RUGGED TYPE MOTOR—12-volt for ordinary operation and 18-volt for heavy duty or ramp operation.

PATENTED NYDEGGER SHACKLES on load wheels insure smooth travel over uneven floors, elevator entrances, etc.

**SAFEST
BRAKE**



The only truck using an internal expansion type brake mounted on the drive wheel and controlled directly from steering handle. This type of brake relieves all strain on motor, gears and chain, and operates in up or down position of handle. If any parts should break between the motor and drive wheel, the operator has absolute control of truck.

Write for Bulletin No. 50, and Specifications.

The MOTO-TRUC Co.
1953 E. 59th Street
CLEVELAND 3, OHIO.
*Originators and world's largest
exclusive manufacturers of
motorized, battery operated
walkie type trucks*

EASY GRIP ROLLER TYPE HANDLE
gives two speeds forward and two
speeds reverse by a turn of the wrist.
Dead man controls insure safety.



PUSH BUTTONS in the ends of handle (within finger tip reach) control lifting and lowering of forks.



SHORTIE MODEL
23 3/4"

STANDARD MODEL, only
27 3/4" from front of truck
to the back of battery.

**PALLET TRUCKS,
PLATFORM
TRUCKS,
HI-LIFT TRUCKS**

Yard Cranes . . .

(Continued from page 35)

carriers by hand and sorted on the ground. Stockpiles are built 35' x 140', with 50-ft. aisles on all sides. The aisles are necessary in case of fire. Piles are ordinarily built 22 ft. high, later compress to 18 ft.

To start a pile operators interlace a row of scrap tires around the perimeter of a proposed stack. Additional tires are placed inside the stack to prevent the sides of the pile from pulling in. Additional units help support the load and prevent the stack from falling over. Operators build up the stacks as the crane deposits tires inside.

A pile averaging 1000 tons can be built in less than three days. Strength and rigidity of the piles are important. If the stack should give way the entire pile would collapse.

Fork Trucks Handle Bales, Skid Loads

Bales of tire parts and similar scrap arrive in box cars spotted at a 20' x 35' concrete dock which is located in the center of the yard. A scale platform is constructed as an integral part of the dock. A 3000-lb. fork truck equipped with a pusher device unloads the incoming bales.

The truck backs out of the rail car onto a scale platform. After the weight is checked, the bales are dumped into trucks which are spotted at the other side of the dock. The bales are then delivered to areas where they are stockpiled by one of the cranes. The dock may also be used for the less frequent receipts of baled goods by over-the-road carriers.

For delivery to the reclaiming plant, oldest piles are broken down first. Tires are picked off by the cranes and deposited in gondolas or dump trailers. Bales are spotted on skids with end panels which

Circle No. 129 on Reader Service Card for more information

act
bale
total
10,0
skid
high
ing
simi
and
by t
boxe
duty
TH
flexi
remo
150
whic
160,0
At
balan
tion
sary
use
not
vious
hand
sortin
done



Easy

To
ASK

MC

Circle

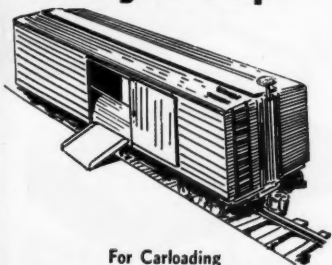
FLOW

act as retainers. Ordinarily four bales constitute a skid load, which totals from 5000 to 6000 lb. A 10,000-lb. fork truck picks up the skids and loads them on flatbed highway trailers. At the reclaiming plant they are removed by similar equipment. Broken bales and loose material are deposited by the crane into 4' x 6' x 4' skid boxes and handled by the heavy-duty fork truck in the same way.

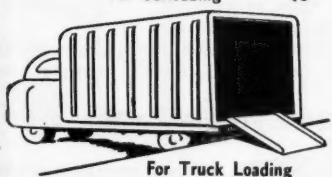
The mobile cranes provide the flexibility needed in building and removing material from more than 150 stockpiles located in the yard, which has a total capacity of 160,000,000 lb.

At the present time receipts are balanced with reclaiming consumption in order to maintain a necessary high inventory. Before the use of the mobile cranes this was not possible. The manhours previously required in tough manual handlings have been channeled into sorting operations, which cannot be done by mechanical means.

Moffat Bethlehem Bridge Ramps



For Carloading



For Truck Loading

Easy to position, safe, low in cost.
2,000 4,000 6,000 10,000
15,000 pound capacities.

To bridge gaps one inch to six feet.
**ASK THE MAN WHO SELLS YOU
MATERIAL HANDLING
EQUIPMENT**

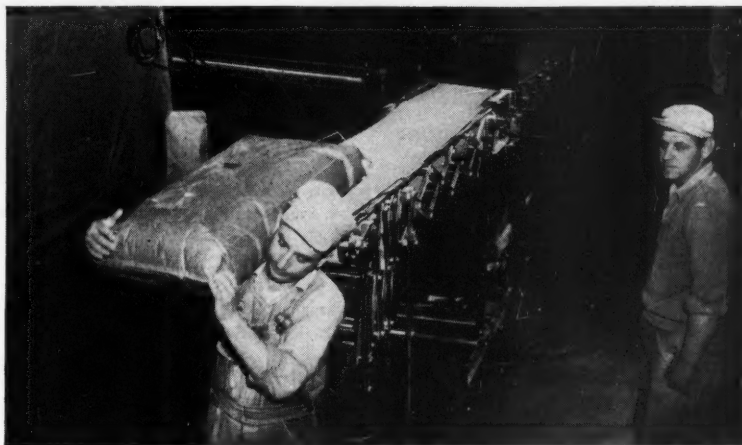
Send for literature and prices.
MOFFAT STEEL COMPANY
1621 Fourth Street
Bethlehem, Penna.

Circle No. 130 on Reader Service Card

Costs cut and

HANDLING VOLUME INCREASED 7½ TIMES

with Standard Conveyors



Another
STANDARD
CONVEYOR
Cost-Saving
Report

**...From 40 bags handled per
man-hour to 200 bags
handled per man-hour**

Conveyors speed operations — cut costs. Here is a "case history" from the report of a Standard Conveyor user.

The Operation:

Handling 100 lb. flour bags from fillers into railroad cars.

Handling Methods Compared:

Using hand trucks—40 bags (4000 lbs.) moved per man-hour.

Using a conveyor system for carrying the bags to the cars — 100 bags (10,000 lbs.) moved per man-hour.

Using a conveyor system for carrying bags to railroad cars and a Standard Portable Extendoveyor (as shown in picture) in cars—200 bags (20,000

lbs.) moved per man-hour.

Increased Productivity:

2½ times using conveyor belt system only. 5 times using conveyor belt system and an Extendoveyor in cars.

Conveyors cut costs—speed operations — can do the same for you. Standard builds conveyors to handle "packages" of all types—bags, boxes, bundles, barrels, drums, cans, cases, cartons. Available in light, medium, or heavy-duty types — portable or stationary — systems, sections, self-contained units — power or gravity fed — yield remarkable savings in time, money, and manpower.

Check your handling problem with Standard.



Write for Standard's
general catalog No. FL-110
Tell us what you want
to handle
or type of conveyors
on which you want
information.

Standard

GRAVITY & POWER
CONVEYORS

STANDARD CONVEYOR COMPANY

General Offices: North St. Paul 9, Minn.
Engineered Systems — Portable Conveyor Units
— Spiral Chutes — Pneumatic Tube Systems

Circle No. 131 on Reader Service Card for more information

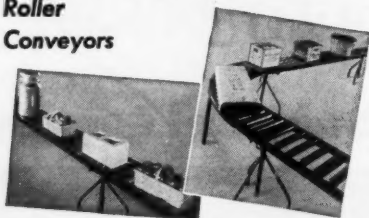
Circle No. 132 on Reader Service Card for more information

"DOUBLE-DUTY"

with SPEEDWAYS

Roller

Conveyors

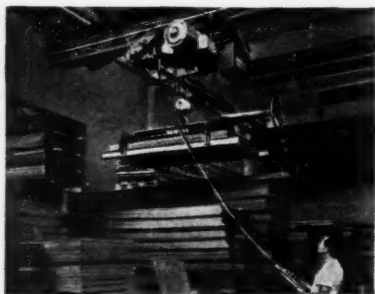


The "Hi-Lo" Feature is one of the plus values you get with Speedways Roller Conveyors. "Hi" side permits moving units wider than frame. With conveyor inverted to "Lo" side, frame acts as guard rail for units to be moved.

Easy portability, sturdy construction and simplicity of hook up that requires no tools are other features of both Speedways Wheel and SpeedTUBE Roller Conveyors. Available in 12", 15", and 18" standard widths, with wheel and roller spacing to meet your requirements, in 5' and 10' straight lengths and 45° and 90° curves, you can set up a material handling line to move your products. Write for literature and the name of your nearest Speedways representative.



Represented and carried in stock by experienced material handling equipment engineers in principal cities. Also manufactured in Canada.



MANSAYER GRABS PREVENT WASTE OF PRECIOUS STEEL

Besides the increased storage and decreased labor incident to handling sheet steel in packages with the Mansaver Grab, consider this: individual handling, particularly of the lighter sheets, bends corners, dents edges—a serious waste. Mansaver Grabs protect the sheets when transported around the plant, eliminating special slitting and trimming. Catalog on request.

COMPLETE YOUR CRANES WITH

MANSAYER GRABS

MANSAYER INDUSTRIES, INC., 3103 EAST ST., NEW HAVEN, CONN.

Circle No. 134 on Reader Service Card for more information

84

Circle No. 133 on Reader Service Card for more information

INDUSTRIAL TRUCKING MADE EASIER

new floor resurfacer produces incredibly hard and smooth floor

• The most practical floor resurfacer developed to date was recently placed on the market by the Monroe Company. Wood and concrete floors are made new overnight with the hardest, most durable resilient floor ever perfected for industrial use. The successor to all "immediate use" floor patch and resurfacers, RE-ZILO, for wood floors; and STEELHARD, for concrete floors, promises to outperform any other floor patch.



These new plasticized floorings produce an incredibly hard and smooth surface, which permits

hand trucks to actually coast over it. These floor resurfacers can be applied right over wood or concrete floors without using metal lath or roughening concrete.

Application is quite simple; after priming the floor, spread the ready mixed material and pack it solidly with a tamp, a roller or your truck. Any handy man can apply at any time of the day without interrupting traffic.

Already in use in the warehouses and loading docks of some of the countries largest transportation companies (names on request). Ideal for inside or outside use, for aiseways, platforms, and driveways, (salt and chloride do not affect it, and intense heat will not cause it to soften).

For complete specifications, submit inquiries and information on your own floor problems to The Monroe Company Inc., 10711 Quebec Avenue, Cleveland 6, Ohio.

(Advertisement)

NEW MILSCO SEATS FOR HEAVY DUTY MOBILE EQUIPMENT

Many Features
Greater Economy

MILSCO Commander

The Milsko seats illustrated are typical of the standard Milsko line for various types of mobile equipment. New features combine extra comfort and serviceability. Sturdy metal frames; Foam Rubber padding with a choice of durable covering materials; easy installation.



MILSCO FOLDING BACK REST



If your equipment requires special seating, our Engineering Department will gladly work with you. Put our years of specialized seating experience to work . . . without obligation.

MILSCO MFG. COMPANY
2742F N. 33rd ST., MILWAUKEE 10, WIS.



Circle No. 135 on Reader Service Card for more information

NOVEMBER, 1950 • FLOW

Caster Curb Service

The Murray Sales Company, Denver, has begun a unique service to its customers in the Denver area. Murray salesmen were running into the headache of misunderstood phone orders for casters: too often, a Murray man would pull up to a customer's door with a batch of one size, and find out he had lugged the wrong kind twenty miles out of his way. So Murray has outfitted a brand-new walk-in truck. The new truck is crammed to the rafters with every kind of caster you can think of. A phone call brings it on the double, and customers just walk in and pick out what they need.

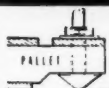
Use the postcard bound into this issue for more information on Advertisements, New Products and Free Literature. Note the number to circle below each item.

STORE CRUSHABLE and ODD-SHAPE MATERIALS

with the

Flexible PALTIER

Self-Aligning Stacking Pallet



Palletizing BUNDLED ROOFING—a difficult job easily and economically done with the *Flexible* PALTIER.



RECEIVING CONE ASSEMBLY.

VERTICAL SUPPORT. Electrically welded mechanical steel tubing.

DIFFERENT LENGTHS OF VERTICAL SUPPORTS MAY BE USED WITH THE SAME PALLET FOR MORE FLEXIBLE AND EFFICIENT STORAGE.



END OF TUBE SWEGGED.

HEX LOCK NUT.

STEEL WASHER.



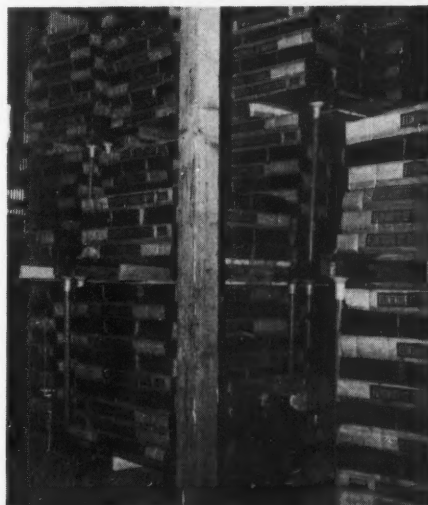
REINFORCING SLEEVE.

ALIGNMENT RING.

MALE CONE, WELDED TO SLEEVE.

NOW practically ANYTHING can be palletized

Write for illustrated descriptive booklet.



THE PALTIER CORPORATION

53 West Jackson Boulevard, Chicago 4, Illinois

DISTRIBUTORS IN PRINCIPAL CITIES

Clark WIRE COIL TRUCKS

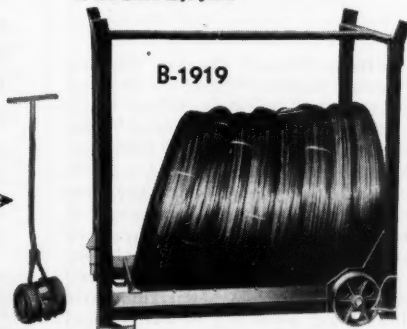
B-1919



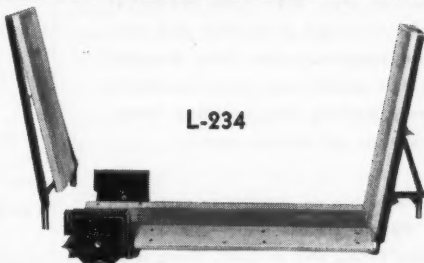
B-1919—Stacking type wire coil truck can be used with Clark Lift Jack for quick maneuvering. Stacks with a fork truck to 2 or more tiers high. Built to handle any size coils. Cleated deck. Steel or rubber tired wheels.

L-234 — Underslung platform. Removable end protected with hardwood strips for handling products such as grinding wheels, large gears, lead pipe coils, etc. Width, and length, and type of wheels to suit.

All units shown may be had with permanently attached front wheels and handle instead of detachable L-156 Clark Lift Jack.



L-234



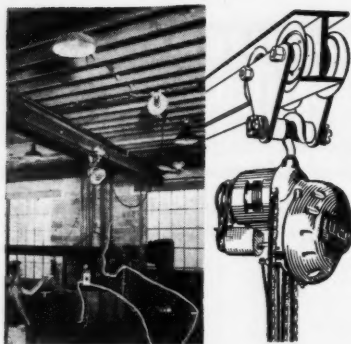
L-215 — One man loads this truck easier than two men load conventional truck. Loads from sides or end. Made to fit any size coils. Cleated deck. Steel or rubber tired wheels.

L-215



All Steel Welded Truck Co.
Rockford, Illinois

Circle No. 136 on Reader Service Card for more information



Saves man power

Now that industry must adjust itself to new conditions with probable manpower shortages, 'Budgit' Electric Hoists will help you keep up production and permit you to use older men and women on load lifting jobs that demanded husky young men to handle them.

With the burden removed from manual lifting, all the workers' energy goes into production. There is no danger of rupture, sprains, or over-fatigue when they lift electrically with fast, easy-to-operate 'Budgit' Hoists. Place 'Budgit' Hoists in key spots on your production, assembly, and inspection lines. Then, check the cost of your increased production and note how operating costs have dropped. 'Budgit' Hoists save many minutes in every working hour and, time saved, proves to be money earned.

There are no installation costs with a 'Budgit' Electric Hoist. It's a complete lifting unit in itself. Hang it up the moment you unpack it, plug into the nearest electric socket, and use!

Available for all standard electric currents in a wide variety of speeds. Capacities: 250, 500, 1000, 2000, and 4000 lbs. Prices start at \$119. Write for Bulletin No. 391.



'BUDGIT' Hoists

MANNING, MAXWELL & MOORE, INC.
MUSKEGON, MICHIGAN

Builders of 'Shaw-Box' Cranes, 'Budgit' and 'Load Lifter' Hoists and other lifting specialties. Makers of 'Ashcroft' Gauges, 'Hancock' Valves, 'Consolidated' Safety and Relief Valves, 'American' Industrial and 'Microsen' Electrical Instruments.

Circle No. 137 on Reader Service Card

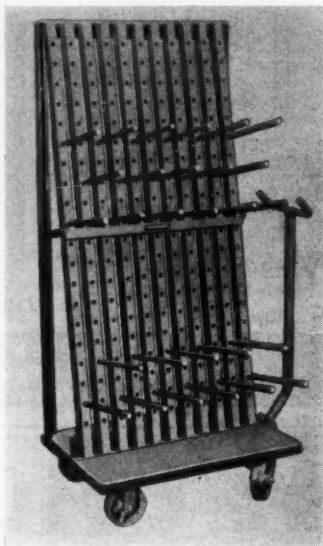
NEW PRODUCTS

(Continued from page 63)

sired. Units are of all-steel welded construction, built to any capacity.

Circle No. 65 on Reader Service Card

Peg Rack Conveyor. The adjustable peg rack conveyor manufactured by Rack Engineering Company was de-



signed for the handling and protection of machine or polished parts. Rack claims it will cut production costs by bringing the machine operator his work, properly positioned for fast handling. The conveyor speeds handling parts of just about any size, shape or weight.

Circle No. 66 on Reader Service Card

Sit-Down Electric Trucks. Addition of three medium capacity sit-down model electric industrial trucks to its Skylift line has been announced by the Automatic Transportation Company. The new Skylifts are rated for 4,000, 5,000 or 6,000 pound loads. They are designed for the type of operation in which the driver remains on the truck almost constantly. All electrical controls are located on a single enclosed panel on the dash. A new trailing axle allows lower mounting of battery and seat, decreasing gravity and increasing truck stability. Tying to 124 inches is possible, even though the collapsed mast height is just 83 inches.

Circle No. 67 on Reader Service Card



Always operating at top electrical efficiency—that's the KW Perpetual Power Plan!

KW! Built to deliver *new*-battery performance under severe—and *continually* severe—conditions! That's why it's a favorite *railroad* battery—and why more materials handling men are welcoming this rugged KW!

There is no "price" battery in the KW line! KW sells, not batteries but peak electrical efficiency at a guaranteed-in-advance cost!

**K. W. BATTERY
COMPANY, INC.**

3705 N. LINCOLN AVE.
CHICAGO 13

Foot of MONTAGUE ST.
BROOKLYN 2

Circle No. 138 on Reader Service Card

OPPORTUNITIES

Used Equipment • Men Jobs • Lines

Rates: for "Positions Wanted" \$4.00 minimum, limit 25 words. For all other classifications \$4.50 minimum for 25 words, each additional word 15c; boldface type for all capitals, \$7.50 minimum for 25 words, each additional word 20c; limit 50 words. Box address counts as five words. All insertions are payable in advance.

FOR SALE

Crescent platform low lift truck. Low height 10" up to 24". 4,000 lb. capacity. Powered by C7 Edison alkaline battery, 25 cells. Both truck and battery in excellent condition. Will sell for value of battery alone. Harry J. Abrams, 331 Emerson Street, N. W., Washington 11, D. C.

1 Elwell Parker EP-4 Lowlift Platform, 4,000 lbs. 1 Elwell-Parker EP-6 Lowlift Platform, 6,000 lbs. 1 Elwell Parker EP-10 Lowlift Platform, 10,000 lbs. 1 Elwell Parker E.L.N.-10 Highlift Platform, 10,000 lbs. 1 Elwell Parker E.L.N.-12 Highlift Platform, 12,000 lbs. 1 Elwell Parker E.L.C. 4T Telescopic Platform 9 ft., 4,000 lbs. All units overhauled and guaranteed. If they are not what we claim them to be, return them without obligation. 1 Baker three-wheel tow tractor, with new no-plug controller and glass insulators drive motor. 5" tires all around. All fragile equipment such as resistor elements and contactors inside battery box. 24A10 Edison Battery. Write Industrial Truck Service, Inc., 3949 Lakeside Avenue, Cleveland 14, Ohio.

Automatic Transporter: 4000 lb. capacity, Model TN-4742. Platform 42" x 20" x 7" high; 3½" lift. Complete with batteries and charger. Excellent condition. \$600.00. Box 11650, Flow Magazine.

LINES WANTED

Washington D. C. representative available. Twelve years' selling; materials handling equipment to Federal Government. Address Box 11150, Flow Magazine.

Manufacturers' representative looking for lively hookup with material handling equipment manufacturers in Southeast territory. Willing to locate in Charlotte, Greenville or Atlanta. Box 11450.

Sales organization which has made outstanding record concentrating sales effort on one product exclusively East of the Mississippi River is interested in securing additional product of merit for this specialty sales force. Write Box 11550, Flow Magazine.

POSITION WANTED

Warehouse manager 10 years' experience in department store and 7 years in mail order advertising. Box 11250, Flow Magazine.

PARTNER WANTED

Established Chicago distributor of material handling equipment exclusively. Must have accounts. Will consider merger with existing company. Box 11350, Flow Magazine.

EQUIPMENT WANTED

DOLLARS FOR INFORMATION

We will pay 5% commission on all leads furnished to us, which result in our purchase of used handling equipment, such as fork trucks, pallet trucks, cranes, etc. Inform us of such equipment for sale and we will pay you commissions equal to 5% of purchase price if equipment is purchased.

A. & A. MACHINERY CORP.
1267 Flushing Ave. Brooklyn, N. Y.

Graduate ENGINEERS — GOOD OPPORTUNITIES for Materials Handling ENGINEERS

Must have 8 to 12 years broad experience with operation, design and uses of all types of materials handling equipment. Desire familiarity with chemical equipment and its operation. Also interested in engineers with specific experience in bulk materials handling. Must be graduate.

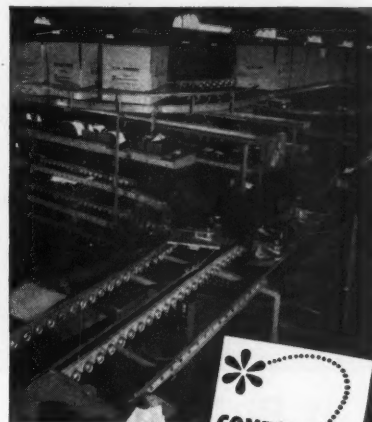
Give experience, education, age, references, personal history, salary received and salary expected. Please be complete and specific.

All inquiries will be considered promptly and kept confidential.

E. I. du Pont de Nemours & Co. (Inc.)

Engineering Department Personnel
Wilmington 98, Delaware

OLSON CONVEYORS



AT WEBSTER-CHICAGO

Again Olson Conveyors have transformed a complex assembly system into a smooth, continuous material flow.

No more expensive production snarls. No more costly and often duplicate manhandling. Instead... an assembly line that constantly, automatically, moves toward completion. Costs are substantially lowered. Efficiency throughout is greatly increased.

Whatever your industry, whatever your problem... whether it's moving your product either partially or all the way from raw to finished... there's an Olson Conveyor to make it a more effective, more profitable operation for you.

Olson can provide a system or single unit for lifting, lowering, or on-the-level handling. A combination of standard and custom engineered elevators, chutes, or conveyors.

Get the details. See how Olson can "custom-tailor" a conveyor system for you. No obligation, of course.

WRITE OLSON—WRITE NOW.



• See our catalog
in Sweet's File

SAMUEL OLSON MFG. CO., INC.

2426 Bloomington Ave. Chicago 47, Ill.
Circle No. 139 on Reader Service Card



When the World Needs a Lift

UNIT 357 on "earth moving" job, lifting globe into position at Midwest Fair exhibit.

It Picks a UNIT to do the Job!

Yes... it's really amazing what you can do with a UNIT Crane or Excavator. Take a UNIT 357 Mobile Crane, for example. It travels anywhere! Any time! Powered by ONE engine... controlled and operated by ONE man. Compact, it has light-truck mobility — the smoothest operating and easiest handling crane made. Works efficiently even in small yards where space is limited. FULL VISION CAB gives operator complete visibility in all directions.

UNIT 357 is self-propelled... mounted on six pneumatic tires... duals on the rear... singles on the front. Balanced weight distribution keeps entire undercarriage on ground while working. Dimensions meet all highway requirements. Get the complete UNIT 357 story. Write for bulletin.



CONVERTIBLE TO
ALL ATTACHMENTS



Rapid conversion, from one attachment or boom to another, is one of the many important UNIT 357 features. If the material handling operations in your plant call for magnet, crane, or clamshell, the UNIT 357 is the logical, and economical, answer to your problem. There is no limit to UNIT 357 versatility!

UNIT CRANE AND SHOVEL CORP.

6531 WEST BURNHAM STREET • MILWAUKEE 14, WISCONSIN, U. S. A.



SHOVELS • DRAGLINES • CLAMSHELLS
CRANES • TRENCHES • MAGNETS

A 5696-2/3A

Circle No. 140 on Reader Service Card for more information

INDEX TO ADVERTISERS

NOVEMBER, 1950

ABC Packaging Machine Corp.	69
Acme Steel Co.	51
Allis-Chalmers Mfg. Co.	11
All-Steel Welded Truck Corp.	85
American Chain & Cable Co.	27
American Monorail Co.	22
Anchor Steel & Conveyor Co.	57
Automatic Transportation Co.	1
Baker-Raulang Co.	49
Belt Corp.	55
Bigelow-Carvey Lumber Co.	76
Brummeler Steel Products Corp.	10
E. W. Buschman Co.	79
C & D Batteries, Inc.	28
Clark Equipment Co.	Insert
Colson Equipment & Supply Co.	62
Cullen-Friedstedt Co.	78
Thos. A. Edison, Inc.	23
Electric Storage Battery Co.	16
Elwell-Parker Electric Co.	5
Faultless Caster Corp.	Inside Back Cover
Dave Fischbein Co.	70
Flexible Steel Lacing Co.	62
Wm. A. Force & Co.	69
General Electric Co.	58, 59
Gould National Batteries, Inc.	2
Geo. Haiss Mfg. Co., Inc.	12
Hapman Conveyors Div.	62
John W. Hobbs Corp.	56
Frank G. Hough Co.	25
Hydroway Scales, Inc.	57
Industrial Marking Equipment Co.	70
Industrial Monorail & Conveyor Co.	79
Ironbound Box & Lbr. Co.	57 & 9
K-W Battery Co.	7
Keller Tool Co.	13
Kilbourne & Jacobs Mfg. Co.	7
Lewis-Shepard Products, Inc.	13
Lyon-Raymond Corp.	17
Manning, Maxwell & Moore, Inc.	8
Mansaver Industries, Inc.	69
Marsh Stencil Machine Co.	60
Mathews Conveyor Co.	19
Mercury Mfg. Co.	84
Milsco Mfg. Co.	83
Moffatt Steel Co.	84
Monroe Co.	9
Motorola, Inc.	82
Moto-Truc Co.	87
Samuel Olson Mfg. Co., Inc.	63
Palmer-Shile Co.	85
Paltier Corp.	20
Powell Pressed Steel Co.	81
Prime Mover Co.	14
Rapids-Standard Co.	8
John A. Roebbling's Sons Co.	60
Rolock, Inc.	6
Ross Carrier Co.	54
Roura Iron Works	56
Roycraft Models, Inc.	78
Schild Bantam Co.	61
Service Caster & Truck Corp.	74
Service Recorder Co.	84
Speedways Conveyors, Inc.	83
Standard Conveyor Co.	64
The Stanley Works	77
Tote Systems Inc.	43
Towmotor Corp.	26
Trucson Steel Co.	Inside Front Cover
Union Metal Mfg. Co.	88
Unit Crane & Shovel Corp.	18 & 80
United States Rubber Co.	4 & 7
Westinghouse Electric Corp.	15, 21 & 24
Yale & Towne Mfg. Co.	

SERS

SERIES 100

SERIES 500

SERIES 200

SERIES 900

SERIES SP

SERIES 300

SERIES H-300-V

SERIES H-700-V

SERIES 1100

UPSI-DAZY

STRETCHING MAN HOURS...

in materials handling jobs!

These representative casters, serving in all leading industries, are providing the greatest opportunity for gains in worker productivity—unit output. They are efficiently, consistently, cutting handling time, *accounting for over 20% of industry's man-hours.*

All the engineering "know-how" from *over half a century of specialized experience* is yours in Faultless Industrial Casters—to speed production lines, trucks, portable equipment . . . with *less time, noise, effort.*

There is a smooth rolling, easy swiveling Faultless Caster specifically engineered for *your* load, speed and floor requirements. Simply select it from Bulletin 1045, or let our nearest sales engineer come in for consultation, no obligation.

FAULTLESS CASTER CORPORATION DEPT. F-11, EVANSVILLE 7, IND.
Branches in Atlanta, Boston, Chicago, Dallas, Detroit, Grand Rapids, High Point, Los Angeles, New York, St. Louis, Canada: Stratford, Ontario

only SIBERIAN LABOR is cheap

is of little consequence.

● But in your plant, labor is not cheap and the amount a worker produces has a very definite relationship to your profit.

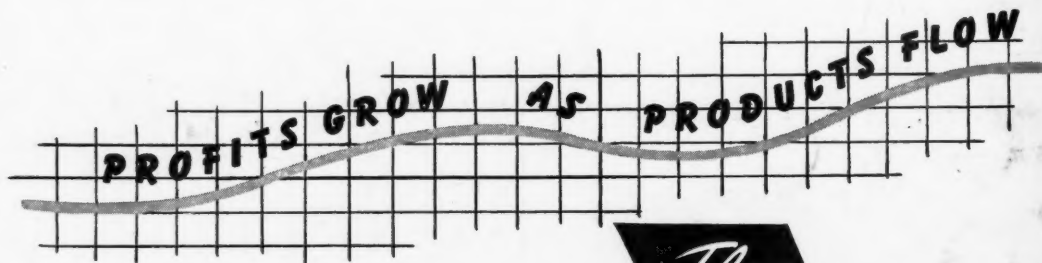
● Is it good business, then, to make your expensive labor do the same menial, back-breaking tasks performed by slave labor when, through the use of modern materials handling equipment, expensive labor can be used for skilled jobs?

● Yet that is exactly what you are doing when you sit him down at a "split-second" production machine and then slow up the method by which materials are delivered to, and taken from, his machine. Neither he nor the machine can produce to the fullest extent . . . and as a result of the "slow-up" on "down time" you pay more for per hour of labor and more per unit produced.

● If you want better production records, then give your workers the means to produce—and that means not only *at* the machines, but *between* machines . . . loading and unloading . . . in your storage areas.

● Today, in the face of keen competition, you need the savings available to you through modern materials handling equipment and methods. \$2.00 is too much to spend to accomplish a 20c job! That is why it will pay you, as an executive, to "get into" the problem with your department heads at the first opportunity.

● After all, slave labor is the only kind of labor that a manufacturer can afford to use to move materials—and slave labor has no place in the American way of doing business!



Fifth of a series of messages to those responsible for American Industry by

Flow

Magazine.

INDUSTRY'S LEADING MAGAZINE OF MATERIAL
HANDLING AND PACKAGING METHODS
Cleveland 13, Ohio

ONE OF A SERIES OF ADVERTISEMENTS PLACED IN THE WALL STREET JOURNAL BY FLOW AS A SERVICE TO THE INDUSTRY